OCTOBER, 1957

Industrial FINISHING

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Get full benefits with Sherwin-Williams coast-to-coast field service

Adjustment of formulations is as important as adjustment of equipment, in getting full benefits from either electrostatic or flow-coat installations.

With industry-wide experience in these as well as other processes, Sherwin-Williams is equipped to supply the finishing materials and the technical service needed to adjust solvent balance, viscosity level and other factors to the needs of the installation.

Put this valuable first-hand experience to work through your Sherwin-Williams Industrial Representative.
Call or wire, The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

SHERWIN-WILLIAMS

INDUSTRIAL FINISHES

Automation comes to
the finishing industry...

NOW ONE-COAT FLOWCOATING

Primes as it Topcoats
with new ©

Ultraflo®

ONE-COAT ENAMELS

Now you can flowcoat in one coat *without prior priming!* Miraculous, new IC® Ultraflo One-coat Enamels give phosphatised metal a blemish-free, mirror-like finish requiring little or no supplemental spray in just *one* operation! What's more, the high gloss finish has all the corrosion-resistance and durability of a conventional two-step primer and topcoat!

And that's not all! IC Ultraflo One-coat Enamels provide excellent "hang" around edges and holes, instantaneous bubble release, and require minimum time in the solvent chamber. It all adds up to faster conveyor line speeds, and tremendous savings in both material and labor costs.

Perhaps you have felt that *your* product would not lend itself to flowcoating. You'd be amazed at the variety of complex parts with large surface areas that can be successfully flowcoated with IC Ultraflo Enamels! You owe it to yourself to find out. Get in touch with your nearest IC Finishes specialist *today* or send for Ultraflo Bulletin No. 216.

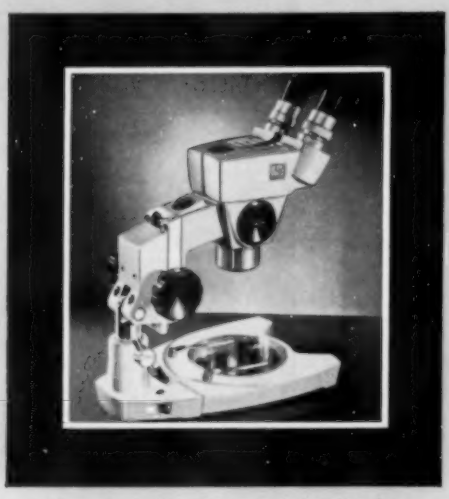
Interchemical
CORPORATION
Finishes Division

Headquarters Office: 224 McWhorter St., Newark 5, N.J. • Factories: Chicago, Ill. • Cincinnati, Ohio • Elizabeth, N.J. • Los Angeles, Calif. • Newark, N.J. • Mexico City, Mex. In Canada this product is made by Aulcraft Paints Limited, Toronto, Ontario, and sold under its trademark. **IC and Ultraflo are trademarks of Interchemical Corporation.*

EPON® RESIN does it!

Protects precision optical instruments from abrasion and perspiration acid

AO Microscope body with Epon resin-based finish is chucked, faced to size, bored, reamed and threaded. Yet the tough Epon finish comes through without a nick or scratch.



A smooth coating of Epon resin-based paint protects AO Stereoscopic Microscopes from abrasion, chemical deterioration and mechanical impact.

Here's how:

At the American Optical Company, Instrument Division, painted castings for scientific and ophthalmic instruments frequently are machined after the finish has been applied. What happens to the finish? *Nothing.* Why? It is protected by the amazing abrasion-resistance of Epon resin-based coatings.

But scuff-resistance is only part of the story. Customer complaints about perspiration acid peeling the coatings on instruments presented another very serious problem.

To counteract this problem, AO chemists put an Epon resin-based paint to the test. Castings with 2 coats of Epon resin-based paint and others with 2 coats of ordinary paint were immersed in the same solution of 5% sodium chloride, 5% acetic acid, 3% isovaleric acid, 3% butyric acid and water for 96 hours. Result: holes had formed in the ordinary paint finish. The Epon resin coating . . . *still in flawless condition.*

If you have a coating problem, Epon resin-based paint may be your answer. Its unsurpassed abrasion- and chemical-resistance makes it an *ideal all-purpose* industrial coating.

Call Shell sales offices for names of suppliers. Write for the Epon resin coatings story, "Planning to Paint a Pyramid?" You'll find it interesting and informative.

Epon resins are the epoxy polymers made exclusively by Shell Chemical Corporation.

SHELL CHEMICAL CORPORATION

CHEMICAL SALES DIVISION, 380 Madison Avenue, New York 17, New York

Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco • St. Louis
IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver

SHELL

STEELCASE INC

adds to individuality of new CustomLine with increased variety of custom colors*

Introduced for the first time this month, the new Steelcase CustomLine offers greater individuality by providing for a wide choice of interchangeable styling features like hardware and legs. New colors add to the variety of styling combinations now available and provide further opportunities for individuality. These colors were created in our studio to enhance the already popular Sunshine Styling colors in the Steelcase line, and their immediate success in several leading administration buildings indicates again that the right finish increases acceptance and saleability.

Write for help on special problems

GRAND RAPIDS VARNISH CORPORATION

Grand Rapids, Michigan

Makers of the famous ®Guardsman *Finish and* ®Guardsman *Cleaning Polish*

'THE BETTER THE FINISH THE BETTER THE BUY

October, 1957
Vol. XXXIII, No. 12

BPA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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33 THIRTY-THIRD YEAR OF PUBLICATION

Random Comment

Metallic Finished; Grained Plastic. Pearsonite plastic is manufactured in several deeply embossed textures, in bright chrome, silver, gold, brass and copper metallic finishes.

In the Texply finish, deep inlays of gold against solid-colored backgrounds provide 3-dimensional textures of unusual beauty and advanced styling.

Exquisite mahoganies and other Woodflex grains provide still another example of the decorative possibilities afforded by this versatile plastic.

Pearsonite combines very light weight with extraordinary toughness, ductility and fatigue-resistance. It does not warp, and maintains the dimensional stability so important in shaped parts. It is odorless, non-toxic and non-flammable. It can be machined, cemented, heat-sealed, sanded, painted, hot-marked, printed, engraved. A product of Metallic Plastics Corp., 27-10 44th Drive, Long Island City 1, N. Y.

Synthetic garments protect him.

* * *

Synthetic Garments Protect . . . Dynel and Orlon garments for protection of workers in plating, pickling, galvanizing, and other operations exposed to corrosive fumes, dusts, and acids are manufactured by Milburn Co., 3246 E. Woodbridge, Detroit 7, Michigan.

Dynel, Union Carbide's acrylonitrile fiber, and Orlon, DuPont's acrylic fiber, are unaffected by acids, alkalies and most organic chemicals in common industrial use. In addition, Dynel will not support combustion.

Sold under the trade-name, Ply Garb, the synthetic garments are reported to give up to ten times the service of ordinary cotton clothing in corrosive environments.

* * *

Iridescent and Fluorescent Paints. Iridescent metallic finishes that will produce sparkling, foil-like surfaces and vibrant, fluorescent colors that have excellent wearing qualities and color retention on outdoor signs are two of the newer decorative aids available in easy-to-use push-button spray packages. [*Cont'd. on page 6*]

DOLAN'S
#3500
"HYR-SOLIDS"
LACQUER
over 35% solids
Specially formulated in conjunction with COMPANION SEALER, to meet the demand for a fuller bodied finish of the *highest* quality.
#3500 "HYR-SOLIDS" Lacquer and COMPANION Sealer may be sprayed hot, cold or airless, *without* reduction.
Highly resistant to cold check, marring or scratching. Extremely tough and durable. Very light in color.
Available in gloss, semi-gloss, satin or flat sheens.
Priced *slightly higher* than ordinary lacquers and sealers, but worth much more!
Order a trial drum of each **today** *with an* **Absolute Guarantee** *of satisfaction!*
Inquire about our "INSTANT STRIPPER"
Inquire about "SPEX" *multi colored one coat finish*
V. J. DOLAN & COMPANY, Inc.
Industrial Finishes of "UNQUESTIONABLE QUALITY"
1830 N. Laramie Avenue Chicago 39, Illinois
BErkshire 7-0100

T-415 RECOMMENDED FOR:
Epon and epon modified coatings
Scotchlite and 3M tapes
Eastman-Kodak photo resist
Electro Cold Stripper
NO HEAT—
NO CURRENT
Clean your carrying racks, baskets, hooks. Reclaim reject parts with minimum time and expenditure.
NON-TOXIC
NON-FLAMMABLE
Order testing sample gratis, 5-gallon at drum price or forward work parts (with requisites) for complete advised work-up. Technical service available.
Alkyd enamels, high bake or air dry, japans, wrinkles, hammers—all remove quickly when immersed in ELECTRO COLD STRIPPER.
Particularly suited for in-line conveyorized stripping as well as batch type operations.
Recommended by leading industrial and Governmental agencies.
ALLIED FINISHING SPECIALTIES CO.
PHONE: AR 6-2222
2641 W. GRAND AVENUE, CHICAGO 12, ILL.

The metallic finishes are supplied in eight different colors.

The fluorescent paints, commonly used by commercial sign and display men, are recommended for signs, displays, decorations and safety markings. Adaptable to use on most clean, dry surfaces of paper, wood, metal, glass and many plastics, they're available in eight different colors.

Pressurized packaging in self-spraying containers makes both types of paint products easy to use. Aerosol finishes are ready for use at the press of a button. Dispensing pressure in the containers is provided by a liquefied gas like Du Pont "Freon" propellent, a chemical compound that also serves as the cold-making refrigerant in many of today's home refrigerators, freezers and air conditioners.

* * *

Non-Fading Gold Aluminum. A revolutionary new method of producing non-fading gold-colored aluminum in a variety of shades and tones has been developed by Kaiser Aluminum & Chemical Corp.

Source of the color is built into the metal itself. The color is brought out —without the use of dyes or other coloring materials—by anodizing under readily controlled conditions. The gold color may be varied from pale straw to deeper gold and gold-bronze tones, and the finish may be either bright or satin.

* * *

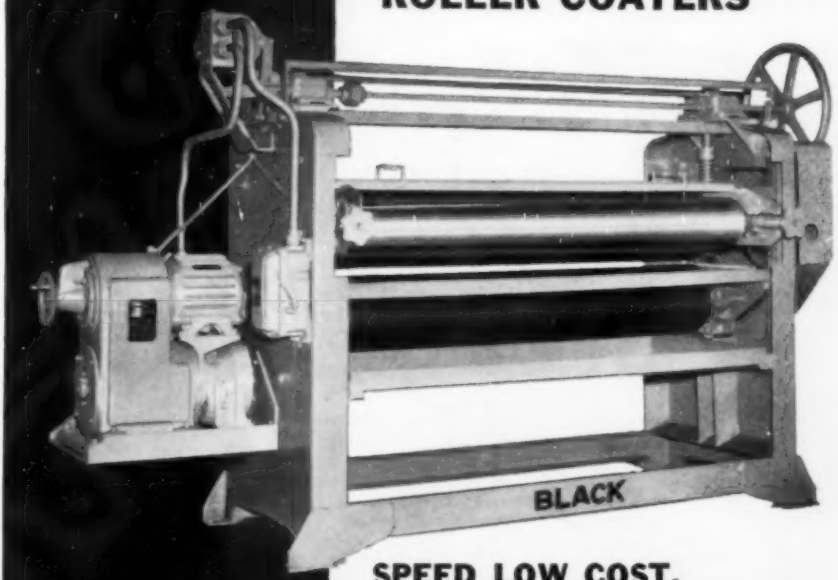
How Color Affects People. The tremendous upsurge of in-plant feeding through plant cafeterias or vending machines, will affect the interior decorations of many factories, according to a joint report by the Rust-Oleum Corp. and The Foundation for Management Research.

Working with vending machine

(Continued on page 161)

BLACK BROTHERS

HEAVY-DUTY ROLLER COATERS



FEATURES

- 21 Standard Sizes From 8" to 122" Wide Capacities
- 0-4½" Thickness Adjustment
- Single or Double Coaters
- Patented Safety Control
- Drip-Proof Reservoirs
- Precision Ground Rolls
- Ball Bearing Throughout
- Micrometic Adjustments
- Single or Variable Speed Drives

Plus many extra-value optional features

SPEED LOW COST, HIGH QUALITY COATING

Whether your finishing needs are intermittent or geared to 24-hour-a-day automation, Black Brothers Roller Coaters can boost your production, reduce down-time, cut coating costs. These are heavy-duty machines, built rugged and rigid to *maintain* high quality production and trouble-free performance. Heavy distortion-free rolls apply *uniform* coatings — assure longer coating roll life. Chrome coated oversize doctor rolls give finer doctoring action.

Versatile, economical — Black's Roller Coaters apply lacquers, paints, sealers, varnishes, waxes, etc. to flat work such as wood, metal, plywood, composition board, hardwood, plastic, cardboard, cement board.

Write today for literature describing the oldest — most complete line of roller coating equipment, available with plus-value optional features to meet *your* finishing needs.

THE BLACK BROTHERS CO., INC.
Mendota 1, Illinois — *SINCE 1882*

NEW AND MODERN COATINGS PLANT IN MASSACHUSETTS

ADDS TO LILLY VARNISH MANUFACTURING FACILITIES....

1. A corner of the new Lilly laboratory in the Templeton plant. All batches are tested and retained samples made on every shipment.

2. Corner of the tank farm. Solvents are piped to the plant.

3. Cutting room with control panel for automatic, Electrically-activated solvent pumps.

4. Electric control room.

5. Blends are made in tanks on the second floor and drawn off by gravity through filtering devices to this first floor filling department.

6. Nitrocellulose storage building located about 100 yards from the manufacturing plant.

7. Shipping department.

.....TO BETTER SERVE OUR CUSTOMERS...EVERYWHERE

Another manufacturing and distribution center for the convenience of our customers, providing industrial product finishes for manufacturers!

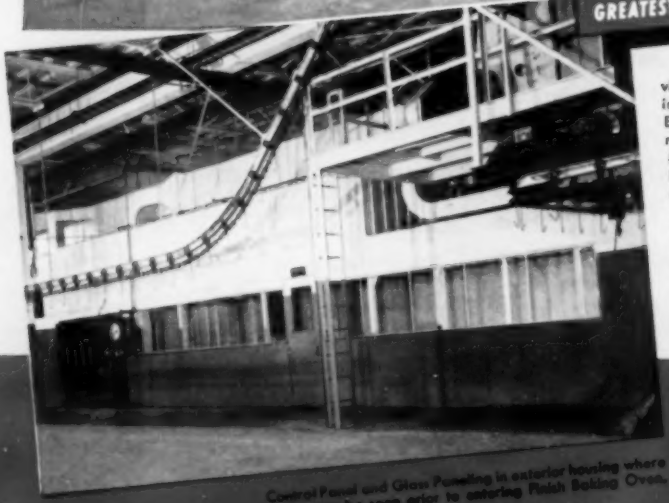
This new Lilly Varnish Company of Massachusetts plant—now in operation in Templeton, Mass.—adds an annual capacity of about one-half million gallons. Modern in every respect, the plant is designed for expansion to increase present output.

LILLY VARNISH COMPANY • Indianapolis, Indiana

AFFILIATED PLANTS / LILLY VARNISH OF MASSACHUSETTS, GARDNER, MASS.
THE LILLY COMPANY, HIGH POINT, N. CAROLINA
PRODUCTOS AUROLIN, S. A., MEXICO CITY

COMPLET

. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!



Control Panel and Glass Paneling in exterior housing where parts may be seen prior to entering Finish Baking Oven.

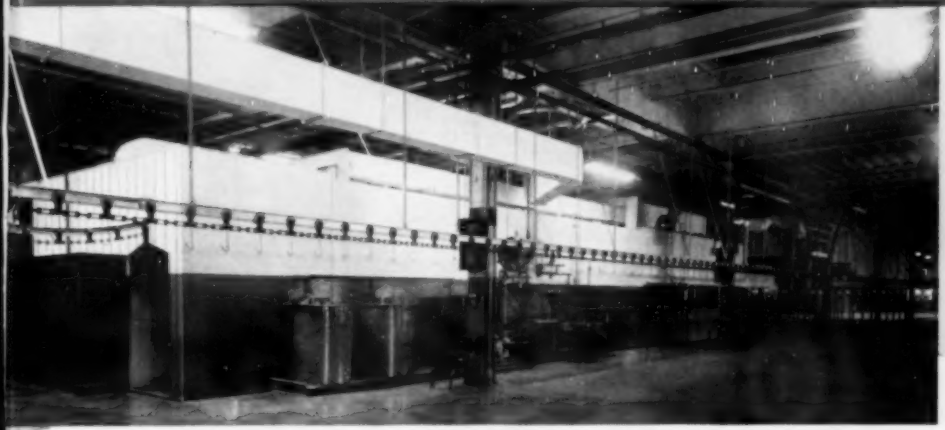
At the right above is a general view of the Complete Mahon Finishing System for Flow-Coating Black Enamel Parts at Chrysler Corporation of Canada, Limited. The 80 Ft. x 24 Ft. 450° Enamel Baking Oven, which is built against the roof trusses to provide storage space below, is visible in the background. Directly above is a close-up of the entrance end of the Flow-Coater showing Paint Mixing Tanks, Solvent Tank, Recirculating Equipment and Operating Control Panels.

M

E

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH



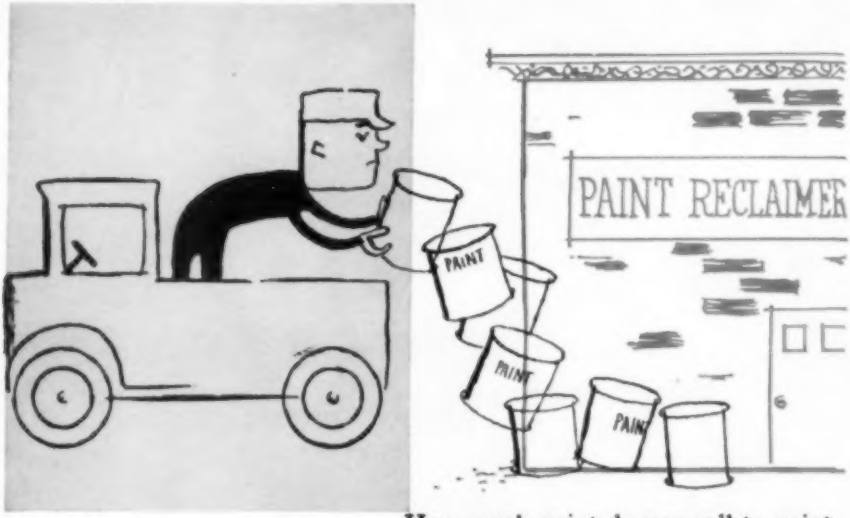
Black Enamel Parts at CHRYSLER CORPORATION of CANADA, LIMITED are FLOW-COATED in a COMPLETE MAHON FINISHING SYSTEM!

In addition to the body finishing system at the Windsor plant of Chrysler Corporation of Canada, Limited, Mahon also installed a complete finishing system for black enamel parts. This is a Flow-Coating System which includes a Mahon Flow-Coating Machine, a Ventilated Active Drip Zone, a Ventilated Inactive Drip Zone, and a 450° Finish Baking Oven with storage space below. Two Enamel Mixing Tanks and a Solvent Tank are provided outside the enclosure. The recirculating unit is equipped to automatically maintain the enamel at a specific temperature in the Flow-Coating Chamber. This is a typical Mahon Flow-Coating system, complete in every detail—automatic from start to stop. If you have a finishing problem, or are contemplating new finishing equipment, you will find that Mahon engineers are better qualified to advise you on both methods and equipment requirements . . . and better qualified to do the all-important planning and engineering of equipment—which is the key to fine finishes at minimum cost. Whether your job is to be Flow-Coated, Dip-Coated, or Spray Painted either Manually or by Electrostatic Process, you will find that Mahon equipment will serve you better, because it is engineered better and built better for more economical operation over a longer period of time. Mahon will do the complete job for you on one contract—undivided responsibility for the entire system insures proper coordination and safeguards you against complications which may upset your production plans and subsequent schedules. See Mahon's Insert in Sweet's Plant Engineering File, or write for Catalog A-657.

THE R. C. MAHON COMPANY • Detroit 34, Mich. • New York 17, N. Y. • Chicago 4, Ill.

Engineers and Manufacturers of Metal Cleaning and Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Spray Booths, Flow and Dip Coaters, Drying and Baking Ovens, and Complete Conveyorized Finishing Systems.

AHON



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THERE'S NO WASTE WITH

Airless

SPRAY PAINTING

How much paint do you sell to paint reclaimers a year?

If your painting volume is big enough to sell ANY paint to reclaimers, investigate the Bede Airless Spray Coating process today.

Imagine a new coating process that saves as much as 50% finishing material!

It's here . . . ready to save you money in many ways . . . labor costs, materials, time and expensive auxiliary equipment.

Ask for more information today.

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HOT SPRAY AND AIRLESS SPRAY COATING EQUIPMENT

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7,400 Sq. Ft., New Research and Formulation Laboratory in Galax, Va.

FINE WOOD FINISHES

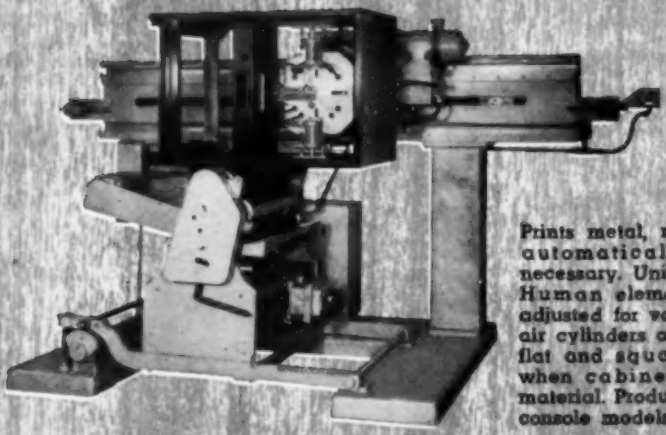
LINDEMAN has the experience and the facilities, plus a fifty-year reputation, to manufacture superior finishing materials for wood and allied wood products. Permit our salesmen and Technicians to help solve your finishing problems.

Courteous Cooperation ***Quality Materials***
Dependable Service ***Economical Prices***

LINDEMAN

Wood Finish Company, Inc.

Indianapolis 6, Ind. Galax, Va.



Prints metal, masonite or wood cabinets automatically. No jigs, no fixtures necessary. Uniform printing, no misprints. Human element eliminated. Quickly adjusted for various sizes. Cabinet held by air cylinders on inside, assuring a perfect, flat and square printing surface even when cabinets are made of thinnest material. Production-2 per minute on large, console models.

Wood

This machine is built in various sizes from the narrowest up to 38" wide, for the graining of various sizes and thicknesses of panels, tables and similar work. Can also be used for edge graining. Explosion-proof motor is mounted beneath a solid base, eliminating fire hazards.

This trademark SCHMUTZ recognized as builders of fine printing machinery since 1923.

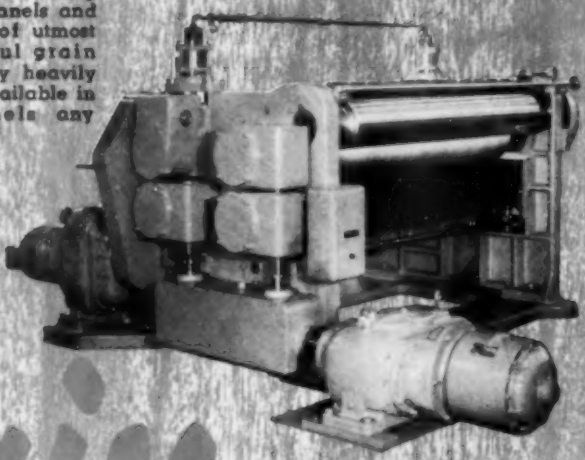
This trademark is known not only in this country, but throughout the world for modern and highest quality printing machinery. Now manufacturing more than 60 different types and models.

VISIT OUR PLANT, SEE THE MACHINES UNDER CONSTRUCTION AND DOING ACTUAL WORK ON OUR TEST FLOOR.

SCHMUTZ MFG. CO.

1600 W. MAIN ST.
LOUISVILLE 3, KY.
U. S. A.

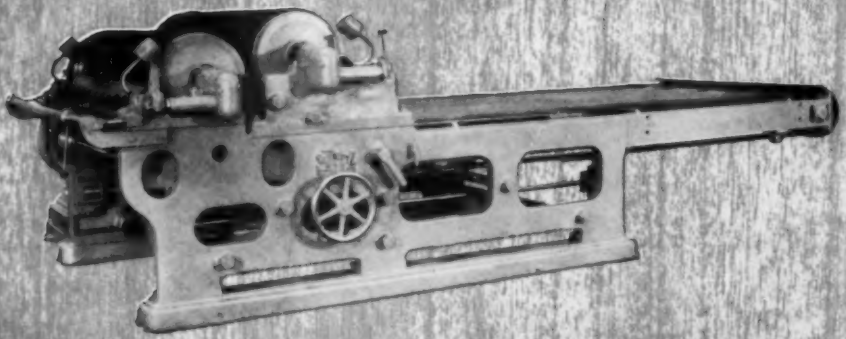
Reverse Roll Coater for eliminating imperfections in hardboard panels and other sheet material, which is of utmost importance in securing beautiful grain effects. These machines are very heavily and accurately built and are available in two sizes for 36" and 48" panels any length and up to 2" thick.



Grain

REPRODUCING EQUIPMENT

This large, heavy duty machine has been especially designed for printing unusually beautiful grain effects on large panels. Panels are automatically fed through the machine so that perfect registration of design can be had. Machine carries two sizes of engraved cylinders: 10" diameter for straight grain and 20" diameter where design of wood is such that repeating is objectionable. Standard size machines will handle panels 36", 48" and 84" wide, up to 12' long and from the thinnest to 2" thick.



PORTABLE HOT SPRAY UNIT CUTS TIME and COST of INDUSTRIAL PAINTING

Offering all the benefits of hot spray painting—better finish and coverage, shorter drying time, material savings—two new Spee-Flo Hot Spray units are especially designed for the fabrication and maintenance industries. Completely portable, these integral units combine a material supply with a circulating heater and the long hose lengths needed for ready access to all parts of large structures and equipment. They incorporate the Spee-Flo divorced action reciprocating pump in two models which carry the original five or fifty-five gallon paint drum.

Write for Literature and Free Booklet,
"WHY HOT SPRAY?"

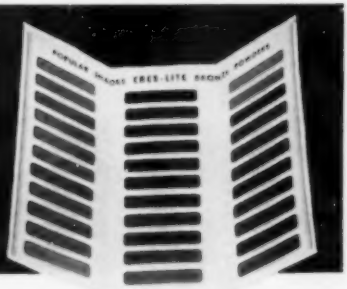
SPEE-FLO MANUFACTURING CORP.

720 Polk Avenue
Houston, Texas

7233

FREE!

NEW COLOR CARD JUST OFF THE PRESS!



Featuring Full Range of 33 Colors - and New Shades Not Shown Before - For Immediate Delivery

CRES-LITE

BRONZE POWDERS

For Smoother, More Brilliant, Plated-Effect Finishes, Pure Metallic Bronze Powders Are Unequalled.

FOR SPRAY, DIP OR FLOW COATING, NOTHING GIVES A PLATED EFFECT LIKE PURE METALLIC BRONZE POWDER.

IN STOCK—a tremendous selection of colors, including the popular *Metallic Pastels*, available from stock for immediate shipment.

COLORS MATCHED—with no variance in quality, color or lustre from batch to batch. Fast service guaranteed.

SPECIAL COLORS—our Design Department will create new colors and shades of metallic finishes for you on request. Over 25 years experience in creating special colors for the plastic and metal finishing trades assures satisfaction.

WRITE for your Free color card of in-stock Cres-Lite Bronze Powders.

CRESCENT BRONZE POWDER CO.

118 W. Illinois St., Chicago 10

1841 S. Flower Street, Los Angeles 15

LESTER pianos
are finished on a COMPLETE
DE BURGH
FINISHING
SYSTEM

SUPERB FINISH is paramount for pianos in keeping with their styling and with their musical excellence. That's why the Lester Piano Company uses a DeBurgh System for its complete piano finishing operation. Lester, like other successful manufacturers, knows that Koch-engineered, Koch-built DeBurgh systems finish their product better while saving them time, money, material and labor.

DESIGNING ENGINEERING
FABRICATION SUPERVISION

Our expert engineers will make an analysis of your furniture finishing operation. Call us no obligation! Write for booklet "DeBurgh Furniture Conveyor." Learn how you can . . .

- cut labor costs 50% and more
- saves 35% floor space
- increase production
- improve quality of your product

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KOCH
SONS, INC.
Evansville 4, Indiana
CHICAGO OFFICE, Merchandise Mart

DESIGNED BY A FURNITURE MAN FOR FURNITURE MEN

TOPS!

"Head and shoulders" above the rest — that is where you will find R/V Products! The laboratory/manufacturing team in our plant is outstanding because of their long and specialized experience. The result is that we can undertake to develop and deliver the very best of industrial finishes of all kinds. If you are not getting just what you want now, or if you have a new job that needs special attention, TRY US . . .

ROCKFORD VARNISH

RV

ROCKFORD, ILLINOIS

MANUFACTURERS OF PROTECTIVE AND DECORATIVE FINISHES

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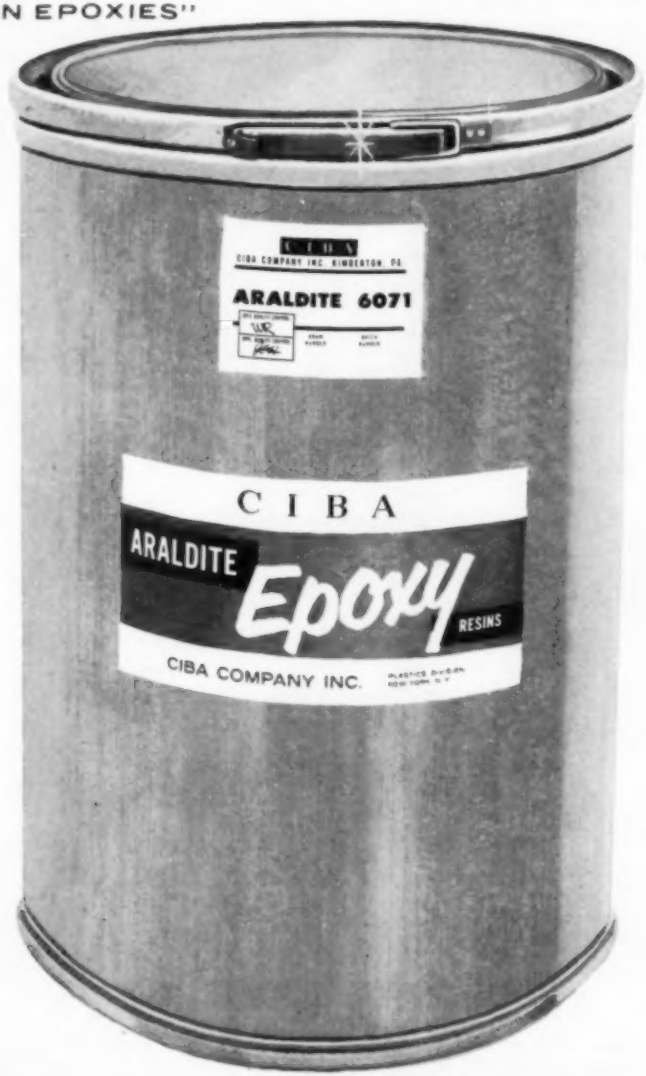
"FIRST IN EPOXIES"

FOR MAINTEN



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6071

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75% solids in Xylol and MIBK (35:65)

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Union Roller Coaters are available in four models that meet the widest variety applications. Sheets can be processed from 12″ to 108″ within the range of these models . . . in thicknesses from 0″ to 4″ on the Model 5 and from 0″ to 2″ on all other models. Larger openings may be specified. Standard machines can coat one surface only or both. Special models are available for coating either or both surfaces and either or both edges.

All Union Roller Coaters are designed for applying accurately controlled coatings . . . paint, lacquer, compounds, wax, oil, glue, adhesives, latex, plastic and other fluid substances . . . to metal, veneer, plywood, fabric, paper, rubber.

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Industrial FINISHING

October, 1957, Issue

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INDUSTRIAL FINISHING Magazine for information about technical paint coating problems, methods and processes; and for sources of supply for organic finishes, equipment and supplies to be used in connection with surface preparation and conditioning, paint application, sanding, paint drying and baking, rubbing, polishing, etc.

Surfaces to be completely or partially coated for protection, decoration or for any other purpose, include components and articles made of metals, plastics, woods, and composition materials; also paper, leather, rubber and fabrics.

The services of many testing laboratories, finishing consultants and special technicians are often available.

These inquiries are promptly answered. As a result, new products, materials and sources of information are continuously being uncovered; valuable contacts are made and timely suggestions for future articles to be published are often developed.

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Enlarged photo-insert shows spray as droplets, no webbing.

the strippable booth-coating that sprays fast . . . ends cobwebbing

LIQUID ENVELOPE #49-36 LO-VIS

LO-VIS gives you all the low-cost clean-up benefits of strippable booth coatings *but completely eliminates cobwebbing!*

It's a low-viscosity formulation, fast spraying, fast drying, and recommended especially for low-pressure equipment.

When clean-up time comes, LO-VIS peels off in big pieces and your booth is cleaned in minutes!

Try LO-VIS and start saving on booth maintenance. Send the coupon now for a 5-gallon sample at the drum-lot price.

#49-36 LO-VIS is one of three formulations for use under other-than-ordinary operating conditions. When special properties are *not* required, we recommend . . .

LIQUID ENVELOPE #49-5396-2
H. D. ECONOMY
. . . used world-wide for over 10 years.

BETTER FINISHES & COATINGS, INC.
268 Doremus Ave., Newark 5, N. J.

Gentlemen:

Please send me a 5-gallon test-sample of Liquid Envelope #49-36 LO-VIS and bill me at the drum-lot price.

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REGINA MODERNIZES Its Finishing Department

By JAMES CURTIN, JR., V.P.

*The Regina Corporation**

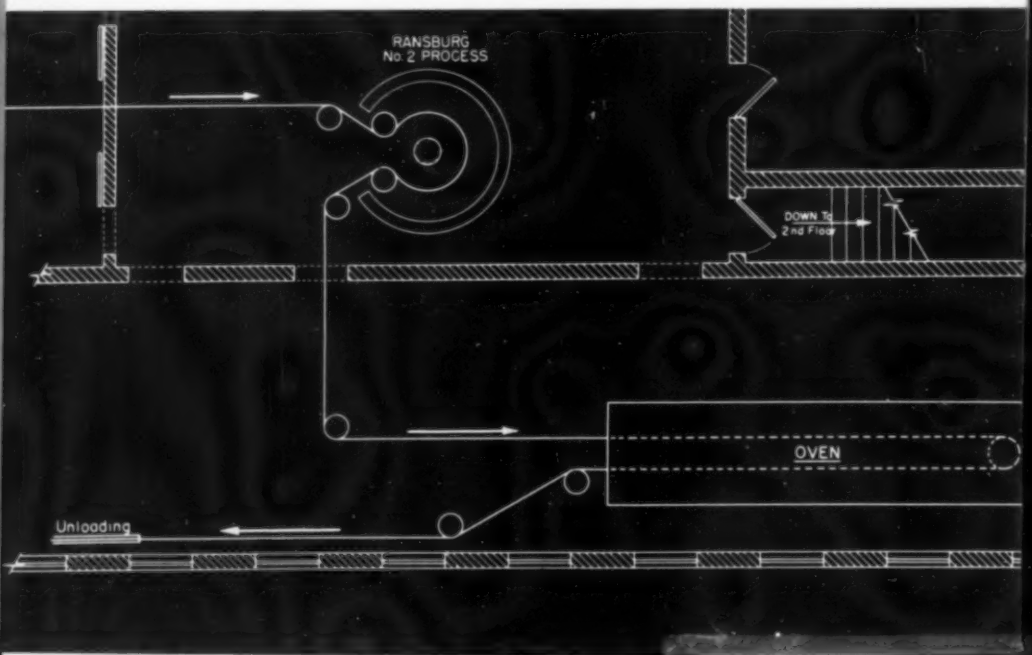
REGINA IS AN old name in the manufacturing industry, dating back to 1892 when the company made music boxes. Some of those boxes are still in existence, but as collectors' items.

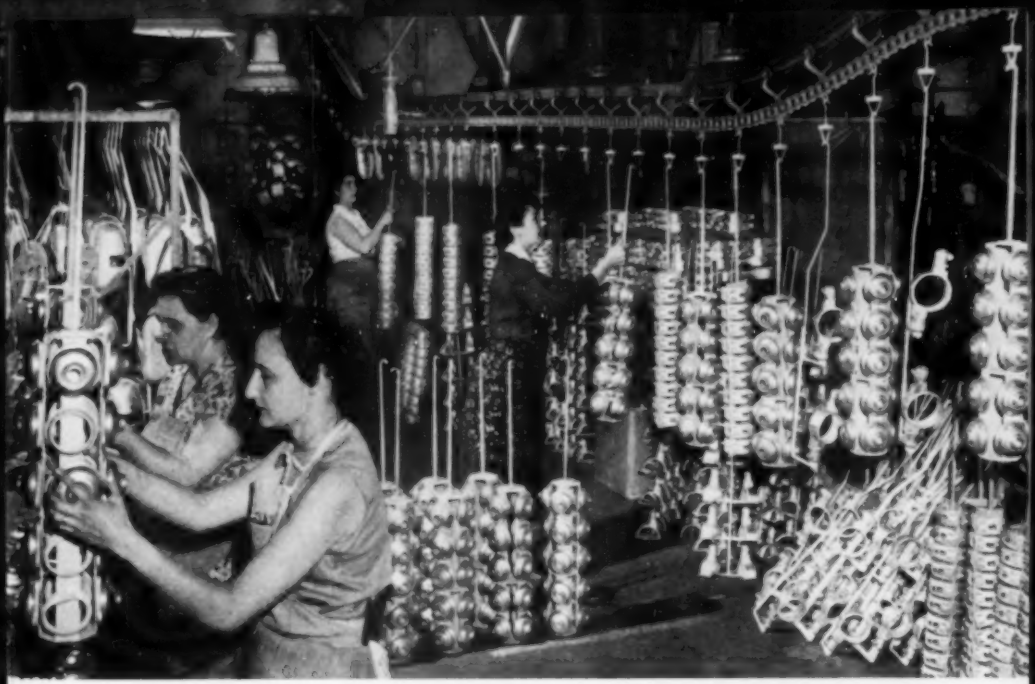
Today, in the Regina plant we produce America's No. 1 floor polisher and scrubber, and the Regina Electrikbroom, an ultra-modern vacuum cleaner.

*Rahway, New Jersey.

Although Regina has been producing fine products for the home since 1892, it has been only since the war that we've really gone into a volume business on floor polishers for home use.

With increased production demands, it was apparent that we'd have to modernize our finishing department. Four parts of the floor polisher and five parts of the Electrikbroom are painted. The cast





Loading station in the Regina plant. Some of the small parts—such as filter caps, swivels and swivel clamps for the Regina Electrikbroom—are grouped as many as 20 to a work-holder for painting electrostatically. Former hand spray booths stand idle in background.

aluminum housing of the polisher, for instance, is painted what we call a driftwood, and the handle is copper color. We formerly hand sprayed our paints and finishing materials.

About four years ago, we first investigated electrostatic spray painting for our products, but at that time we decided against it. It seemed to us that the process then offered would require too much hand touch-up on our parts.

Looked Into No. 2 Process of Electrostatic Spray Painting

When the Ransburg No. 2 Process reciprocating disc was announced in the trade magazines, we became interested all over again, for it looked like a solution to our painting problem. We talked to one of the sales engineers, and saw movies of the equipment in action. Then we sent our parts to the Ransburg laboratories for testing. Our chief engineer, E. L. Verhagen, and I went out to see our parts run in the laboratory.

One No. 2 Process electrostatic unit paints as much as 8 hand sprayers, gives a more uniform coating, uses 50% less paint, involves almost no overspray and it produces fewer rejects.

We had been using hand spray for so long that it wasn't easy to visualize getting into electrostatic. And we were a little hesitant in

making the change, for plans were in the offing then for our new plant. But, after seeing the work run in the laboratory, we were satisfied. We made immediate plans for changing to automatic electrostatic spray painting.

Easily Does the Work of Eight Hand Sprayers

The switchover was made with a minimum of interruption. Owing to the fact that we were planning to move into our new plant, no major alterations were made in the department. Slight changes were made in our conveyor and oven, and now the one No. 2 Process unit is handling the work which formerly required eight hand spray men. All but one of the former spray booths are now idle. We are painting over 90% of our production electrostatically. We still hand spray some short run parts in our commercial models.

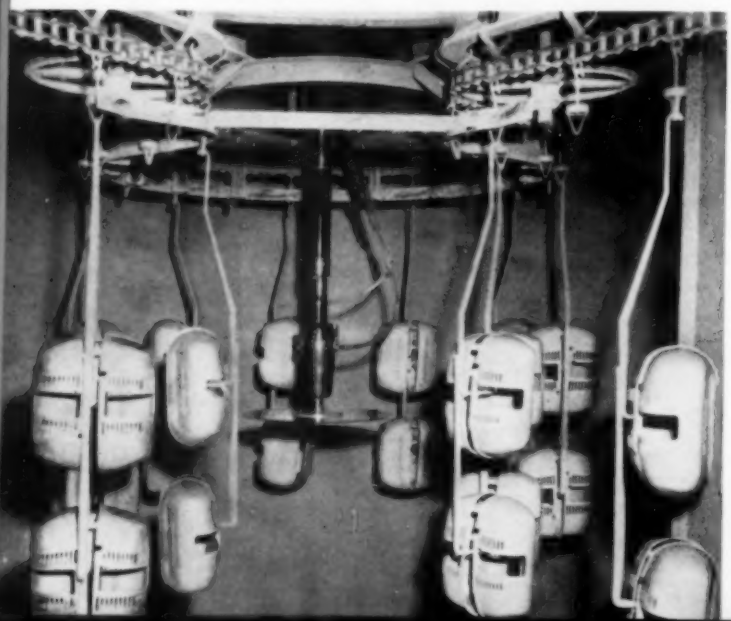
Even with our production up about 15% on the popular home models, we are getting a substantial saving in paint. By gallons, we are using 50% less paint. There are fewer rejects. We are getting improved uniformity—better coverage per gallon—for we are putting more paint on the product instead of up the exhaust stack. We are using the same quality of paint with but a slight change in formulation to work better by electrostatic application.

Maintenance costs are reduced too. The interior of the shield in the electrostatic spray area goes for weeks without cleaning. Frequent cleaning isn't necessary.

More Rack Loaders; One Supplementary Sprayer

By the former method, the hand sprayers racked parts on workholders. Now we use five rackers.

[*Cont'd. page 32*]



Aluminum housings for Regina floor polishers are uniformly coated electrostatically as the conveyor makes a loop around the rotating disc which moves up and down. Unpainted parts enter at the left and finished pieces leave at the right on the way to the oven. The one electrostatic unit does the work formerly performed by eight hand sprayers.

SPRUANCE QUALITY MAINTENANCE PAINT PRODUCTS

The physical condition of your plant, warehouse and offices is important. May we suggest that you check them inside and out — the wood, metal, concrete, machinery, pipes, boilers and floor surfaces?

Then specify Spruance — primers and finishes to condition them for years to come.

Spruance

THE GILBERT SPRUANCE COMPANY

"The House That Quality Built"

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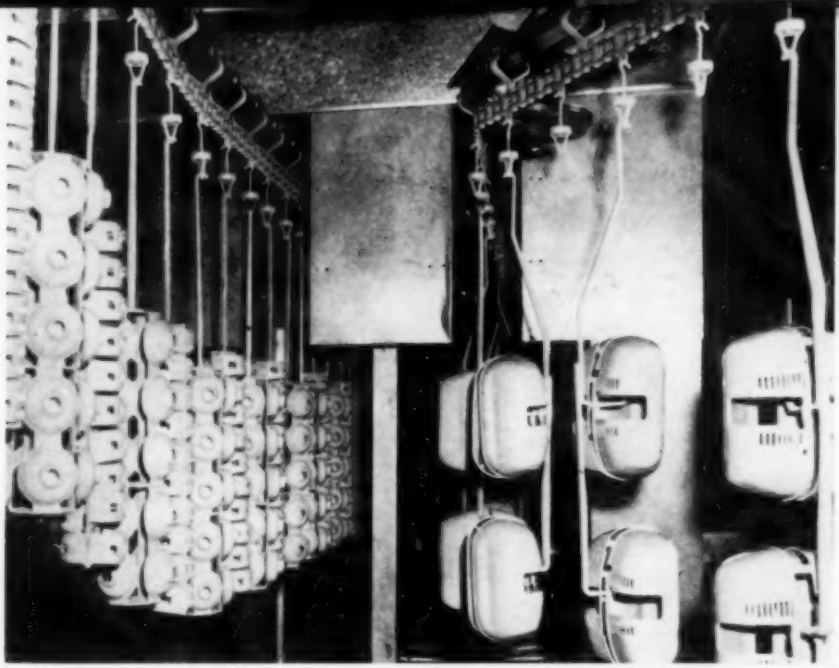


Polisher housings, hung four to a fixture, are shown leaving the infrared oven, while the smaller pieces enter the oven at the left. The coatings are baked at 375° F.

One sprayman is used on certain parts which require reinforcement on some areas. Some of the smaller parts, such as swivels, swivel clamps and filter caps, are grouped on workholders spaced at 12 to 24-in. centers, depending upon part sizes.

Parts to be painted rotate as they enter the loop in the electrostatic spray area. Length of the stroke on the reciprocating disc is adjustable to 48-in.; this easily takes care of coating the handles of our floor polisher. Some of the smaller pieces are hung 20 to a fixture, while only four housing covers are hung on a holder. The single reciprocating disc is 15-in. in diameter.

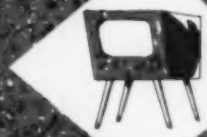
As painted pieces leave the painting area, the conveyor rises over other work areas, and all painted parts travel overhead on the way to an oven. The conveyor is 560-ft. in length and travels at the rate of 7-ft. per minute. Parts bake out at 375° F. for eight minutes in the infrared oven. From the oven, parts go to the inspection and unloading station; then to assembly, with a minimum of stockpiling of painted work.

As it is now, we are operating in cramped quarters, really "bulging at the seams," but we are planning to move into our new and modern building here in Rahway. Our new plant will be twice the size of our present quarters.

Photographs for this article were supplied through courtesy of Ransburg Electro-Coating Corporation.

SPRAY
2 OR MORE COLORS

FROM
ONE GUN
AT THE SAME TIME



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Will create more sales . . . ideal for most any product. MULTAKOLOR is applied with ordinary spray equipment; leaves no overspray. **Dries in 15 minutes to touch.** Can be handled in one hour. Resistant to alcohol, grease, oil, crayon marks and ink. Excellent covering qualities hides imperfections and permits use of less expensive base materials. Touch up if necessary, cannot be detected. Stock colors may be intermixed to achieve many other interesting patterns. Technical consultation on request. Send for free MULTAKOLOR sample today.

Veterans Administration Headquarters Washington, D. C. has approved United Lacquer's MULTAKOLOR as an interior decorative finish including bathrooms, kitchens, wood trim, sash and doors.

UNITED

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SOUTHERN DIST: *Crown Paint, Inc. 2127 N.W. First Ave., Miami, Florida*

BINKS
MADE IN U.S.A.
MODEL
19J
A
B
65% savings in paint!
A To clean out a conventional spray gun after transferring to another paint line, 7 to 10 ounces of paint must be "bled" to prevent a color inter-mix.
B Only 2 to 4 ounces of "bleed-out" paint are required to clean out the new Binks Model 19J spray gun —a 65% material savings.
A
Fluid passage
ordinary spray gun
B
Fluid passage—Binks Model 19J

New Binks spray gun for circulating systems

Cuts clean-out costs 65% when changing colors

Plants using multi-color paint circulating systems frequently shift spray guns from one color line to another. To clean the old color out of the spray gun the new color must be run through the gun,(and quick detachable hose connection) until there is no danger of inter-mix. Paint lost through this "bleeding" operation runs between 7 and 10 fluid ounces.

New spray gun cuts "bleed" losses almost 65%. Binks Model 19J spray gun, when used with the same quick detachable hose connection, slashes "bleed-off" losses. Only 2 to 4 fluid ounces must be passed through the passages to make certain there is no inter-mix to cause a finish reject.

Unique design features. Binks Model 19J is an efficient, dependable production spray gun in every respect. Its paint saving characteristics are achieved through two unique internal design features. Design feature number one greatly reduces the amount of paint contained between material inlet and nozzle orifice over that contained in conventional spray guns. Feature number two eliminates all "pockets" in the gun head which can trap paint. This also contributes to faster clean-out with less material waste.

Automatic model available. Binks Model 21J is an automatic spray gun, triggered by air pressure. On automatic painting machines it provides the same paint saving economies as Model 19J.

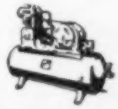
All the facts in Bulletin RFG. Get the complete story on these two new Binks spray guns. Ask your Binks industrial distributor for a copy or write direct to the address below.

Ask about our spray painting school
Open to all...NO TUITION...covers all phases.

2715

Binks
EVERYTHING FOR SPRAY PAINTING

SPRAY GUNS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Binks Manufacturing Company
3116-40 Carroll Avenue, Chicago 12, Illinois

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WHY WOLVERINE?

Wolverine specializes in the development of CUSTOM FINISHES. A distinctive color that could be merchandised by your company need cost no more than an ordinary finish . . . could be the answer to your presentation of a new product line.

If your current source is presenting you with creative sales-making finishes, our services may have little appeal. But, if you want FRESH THINKING, our finish engineers would welcome the opportunity of working with you to develop NEW FINISHES that may increase the SALES of your products.

WOLVERINE FINISHES CORPORATION

836-50 Chicago Drive, S. W. · Grand Rapids 9, Michigan

Specialists in the Manufacture of CUSTOM Industrial Finishes . . . Stains, Fillers, Glazes, Lacquers, Enamels, Synthetics.

Plants in Grand Rapids, Michigan; Louisville, Kentucky; and Morganton, North Carolina

WHY USE A PRIMER?

BY L. HEARD*

FOR A CRITICAL usage it is seldom possible to incorporate all of the necessary properties in a one-coat finish. It is usually conceded, I believe, that the performance of a finish coat can be appreciably improved by the use of a properly formulated primer.

In general, a primer serves as the foundation for the finishing system and it should perform the following functions:

1) Provide maximum adhesion to the substrate.

2) Improve resistance to corrosion or to specific deteriorants, such as alkalis or acids.

3) Fill all minute and minor metal imperfections.

4) Provide additional properties desired in the finish system that are not otherwise obtainable.

5) Serve as a good protective "shop-coat" for products that will be finished later.

Most Desirable Top Coat May Not be Good Primer

The color of the topcoat may be such that the pigments required are weak in corrosion resistance. Often the vehicles essential to gloss, light color, or color retention of the topcoat do not provide the best adhesion or corrosion resistance. In those instances, the use of a primer is essential, and the requirement may dictate the use of corrosion resisting pigments—red lead or zinc chromate, for example. In such primers the distinctive reddish orange or greenish yellow color, which can be darkened or shaded within limitations, may be satisfactory for the primer, but not acceptable in the topcoat.

Similarly, a vehicle too dark in color for the topcoat may provide superior adhesion and corrosion resistance in a primer.

In the case of some products that are exposed to severe conditions in use—washing machines and air conditioning equipment are prime examples—it may not be possible to obtain adequate resistance properties or apply the necessary dry film thickness in a one-coat finish. This condition would dictate the use of a primer, which, in combination with the finish coat, provides a superior finish system.

Primer Serves as Shopcoat During Shop Operations

Properly formulated primers also serve as excellent "shopcoats" for parts, sub-assemblies and even complete products that are to be stored for some time—inside or outside—until they are put into service. Structural steel primers are typical of such "shopcoats." Topcoats may be applied later, the primer having served a protective function meanwhile. [*To page 38*]

*Forbes Finishes Division of Pittsburgh Plate Glass Company.

There are many instances, other than those indicated, where a primer should be used. If there is any doubt as to the advisability of using a primer, consultation with a reputable supplier of industrial finishes is recommended. Knowledge and experience acquired in the formulating and testing of innumerable types of finish systems will enable such a supplier to suggest the most practical solution to the problem.

Many Primer Formulations to Meet Special Conditions

Several manufacturers of industrial paints and finishes can supply primers for a multitude of applications. Years of experience in the production of finishing systems for many industrial products has given them the kind of know-how that is needed to recommend a desirable primer for a specific purpose. In addition to primers for specific uses, there are some so-called "universal" primers. The latter may be used under lacquer or enamel, may be either air dried or baked and, frequently, may be applied in several different ways.

Most primers, however, are designed for a special purpose. Technical expertness and accumulated practical skill are needed to formulate such products in instances where existing formulations may require modification or improvement. New raw materials and intermediates are constantly being evaluated. There are hundreds of formulations and new ones are always being developed.

Reprinted, with slight editing, from Forbes Quarterly Review.

DeVilbiss Operates in Brazil

Purchase of facilities for the manufacture and distribution of DeVilbiss spray painting and finishing equipment in Sao Paulo, Brazil, is announced by Howard P. DeVilbiss, president of The DeVilbiss Company.

A controlling interest in Matrix, S.A., a tool and die manufacturing firm in Sao Paulo, has been obtained by DeVilbiss.

"The expansion of industry in Brazil and in Latin America generally, with the consequent growth in that market for our products, makes the establishment of manufacturing facilities in Sao Paulo a logical and forward-looking move," Mr. DeVilbiss declares. "We intend to start production of spray guns, transformers, pressure feed tanks and other finishing equipment as soon as possible while maintaining the company's present production of tools and dies. For this purpose, we will ship certain specialized machinery to Sao Paulo."

Jose L. Ribeiro, a graduate engineer, has been named managing director of the company. He has previously been associated with his father, Noe Ribeiro, one of Brazil's leading engineers, in Matrix, S.A., who will remain connected with the company in a consultant capacity. Mr. Ribeiro has spent considerable time in the United States acquainting himself with the American production methods.

Mesbla, S.A., which has been sales representative for DeVilbiss in Brazil for 30 years, will be in the company, according to the announcement.

Electro-Cleaning Material

The use of Oakite Composition No. 90 for reverse current cleaning of steel before plating is the subject of a service report recently published by Oakite Products, Inc., manufacturer of metal cleaning and conditioning materials.

Complete information concerning this new electrocleaning material is available from Oakite Products, Inc., 132F, Rector St., New York 6, N. Y.

IBM relies on RANSBURG NO. 2 PROCESS Electrostatic Spray Painting

to get the excellent and uniform high quality wrinkle finish on all

IBM ELECTRIC TYPEWRITERS

IBM's strict quality standards are easily maintained with Ransburg No. 2 Process in the painting of Electric Typewriter parts. Rejects by the former hand spray method used to run as high as 30% on some parts. Now, with automatic Electro-Spray, rejects for all reasons are only 3% to 5%.

Three Times as Many Pieces per Gallon!

Along with increased production, paint mileage is stepped up, and they get three times as many pieces per gallon as by the former hand spray method. That's because efficiency of the Ransburg No. 2 Process Reciprocating Disk puts the paint where it's supposed to go . . . on the parts.

Want to know how Ransburg Electro-Spray can improve the quality of your painted products . . . and at the same time, cut your paint and labor costs? At no obligation to you, we will make complete laboratory tests with your products to prove the advantages and cost saving benefits which can be yours with Ransburg No. 2 Process. Write or call.

Both prime and finish coats are uniformly applied to IBM Electric Typewriter cases as they rotate around the floor-mounted Ransburg No. 2 Process reciprocating disks. Automatic Electro-Spray provides three times as many pieces per gallon as by former hand spray.

Ransburg ELECTRO-COATING CORP.
Indianapolis 7, Indiana

RANSBURG

Painting ABC Trailers

BY WALTER RUDOLPH

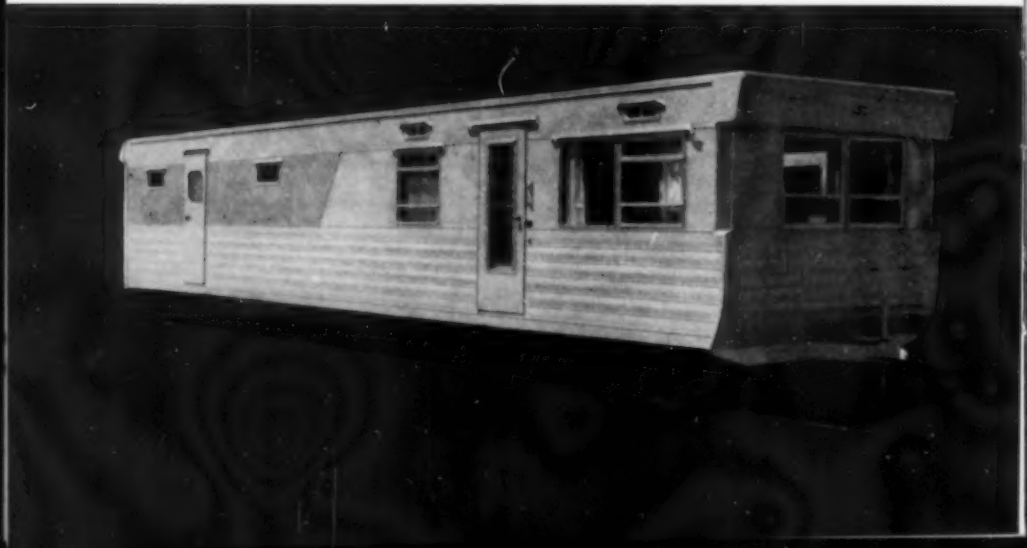
THE ABC COACH CO., INC., has identical plants in Clarion, Pa., and Loveland, Colorado. We visited the Clarion operation to look at some of the interesting features about painting the massive product that today's trailer coach has come to be.

ABC's 1957 models number 16. There are four lengths to choose from, ranging from 36 to 50-ft. Widths are 8-ft. and 10-ft. Into these dimensions ABC packs an amazing array of beautiful living accommodations. Rex Anderson, president of the firm, has more than 25 years of experience building "America's Best Coach".

Ingenuity Used in Developing Methods of Painting Trailers

He has shown real ingenuity in laying out and developing the production and painting facilities at the Clarion factory. When you work with a bulky object that resembles nothing so much as a house on wheels, you practically work "for it". That is, you don't move it around very much; you go to it, and keep adding on to it until it's finished and ready to roll on its own.

But Mr. Anderson does have a production line basically like any modern manufacturing setup. It is centrally located in the factory and



has side feeder areas. It begins with the steel frame being welded, and a metal-covered underbody. Actually the first painting is then done to forestall corrosion of the metal. A black undercoating is sprayed on before the frame is turned over and started along on its successive stages of building.

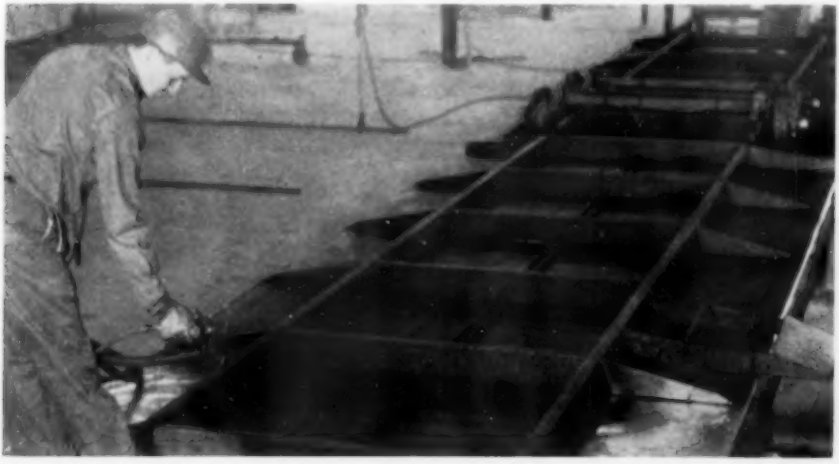
It moves on casters, guided by angle iron, through the factory. A versatile woodworking department feeds precision-cut pieces to an assembly area, where a complete wall will be put together. An overhead monorail helps position a giant panel or wall onto the coach bed.

To stick to the painting of trailers, when the interior is completed, a clean-up man moves in, sweeps up and dusts, and prepares for painting. In effect, you have here a situation where two painters will come in, and paint their own spray booth.

Spraying the interiors; a portable light is at left; exhaust porthole is at the right.

Exhaust at End Window; Spray Painting Inside

A movable exhaust duct about 2-ft. in diameter is fixed to a trailer window, and sealed in with



The steel base of every ABC trailer is given protection with automotive undercoating.

Cleaning outside of coach before painting.

masking tape and wrapping paper. Trailer windows otherwise are covered with regular shields made to fit tightly over the glass. The trailer door is left open for passage of painters' hose and the entrance of air that will be exhausted with overspray and fumes.

Portable electric light stands, with explosion-proof lights, are moved about the interior of the coach as required, as painting progresses. The first interior coat is a heavy sealer. When dry, this is followed by a satin-sheen lacquer of the hard finish type. Between these two coatings, puttying and caulking, and whatever sanding that might be required are done.

Cleaning Exterior Al. Skin; Preparation for Painting

Meanwhile on the coach exterior —an aluminum skin—several clean-up men are at work. Ordinary cleaning rags and thinner are used to remove all marks left by other workmen. Excessive caulking compound that might ooze out of joints is also removed.

Standard exterior automotive paints are used to paint the outsides of these coaches. Several colors might be applied, in which case masking is extensive to cover the center line coat before the main color is applied.

Small work is painted in this spray booth.

Here we run into one of the innovations that helps ABC paint the entire exterior of a coach, virtually as if the vehicle were moved into a spray booth. As the assembly work on the coach has proceeded, the coach has moved into a position where sliding wall sections can be

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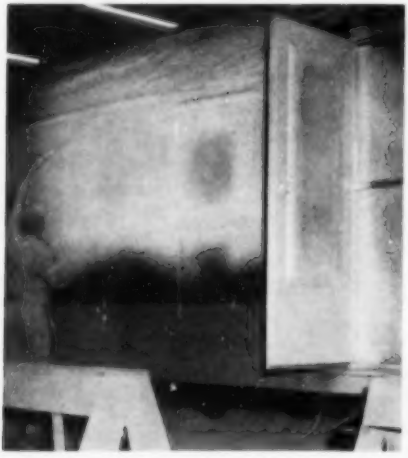
pulled out onto the manufacturing or painting floor. It amounts to a "curtaining off" of the individual coach when it is ready for exterior painting.

However, the sliding walls do not extend to the ceiling. An open area of about 2-ft. remains between the top of the walls and the ceiling. Through this open space, on each side of the trailer, a downdraft is created when exhaust fans are turned on at the ends of the booth-like space.

Primer Coat; Dry; Mask; Spray Top Coat; Incidentals

Standard procedure on exterior coatings calls first for one coat of exterior primer. When this is dry the sliding doors are closed for final painting. On a 2-color job, the center line coat goes on the primer first, of course. This is known as a 20-minute enamel. Then follows appropriate masking before the final overall color is sprayed on the rest of the coach.



Painting middle band of interior; windows and the areas above and below are masked.

The maximum trailer length is 50-ft. and the area where the exterior painting is done measures 56x14-ft. As I have previously pointed out, the use of automotive production colors assures a finish that lasts for years.

Naturally, there are many odds and ends of trailer components to be assembled when the big painting jobs have been done, inside and outside. These include pieces of trim and fitting-out boards. They are primed, sanded and finish painted in a spray booth located off to one side of the assembly line. Quart paint cans attached to cup guns are used, for a variety of paints. On the assembly line, 5-gallon cans are moved right next to the job.

High Heat Resistant Paints

Excellent resistance to the high temperature of a blast flame is reported for two of several heat-resistant paints tested by the Army. A report of the research has just been released to industry through the Offices of Technical Services, U. S. Department of Commerce.

A zinc dust pigmented dibutyl titanate resin type paint displayed superior resistance to a short blast of flame similar to that produced during rocket firing. Resistance of an aluminum pigmented silicone resin type was also excellent, but was rated somewhat lower than that of the zinc DBT composition.

Olive green silicone enamel failed in all resistance tests, either alone or in combination with a primer such as the zinc DBT paint. The paints were coated on stainless steel panels and baked. For the tests, the panels were passed through the blast flame at a speed of one inch per 10 seconds.

The report, PB 121736 "Heat Resistant Paints for Rocket Launchers," T. Rice, Rock Island Arsenal Laboratory, U. S. Army, Sept. 1956, may be ordered from OTS, U. S. Department of Commerce, Washington 25. 50 cents.

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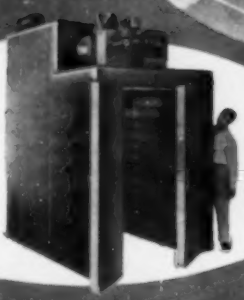

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If you have an oven application, discuss it with a KIRK & BLUM Engineer. There's no obligation. Write for free literature.

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"Sure, Jess, it's as safe as they make 'em. Of course you don't drink Chlorothene® or swim in it. You use good common sense in handling any solvent."

"Tell me more. Will it catch fire?"

"No, unlike petroleum solvents, it has no flash or fire point. We use a lot of Chlorothene for cold cleaning, wiping and dipping because it's the safest solvent we can buy."

"Is the toxic hazard from breathing vapors very high?"

"It's one of the safest. Has an M.A.C. rating of 500 ppm. In fact, our Safety Engineer recommended it."

"Guess that takes care of the safety angle."

"Yes, and Chlorothene really takes care of the cleaning angle, too. It's high in solvent power and evaporates fast."

"Say, Chet, did you invent this stuff?"

"Nope. Dow developed it."

"Who?"

"Dow. The Dow Chemical Company, Midland, Michigan. You know, the company that makes the complete line of chlorinated solvents—Dow Trichloroethylene and Dow Perchloroethylene Industrial for vapor degreasing, and Dow Methylene Chloride for stripping and cleaning metals. Why don't you write them for the whole story?"

YOU CAN DEPEND ON DOW

Finishing Name Plates And Instrument Panels

BY FRANK JANETZKE
V. P. in Charge of Production
American Name Plate & Mfg. Co.*

WE OPERATE A custom shop on a production basis. This requires some ingenuity and considerable flexibility. We produce many products other than name plates and instrument panels — for example, instruction plates, escutcheons, dials, scales and decorated metal specialties.

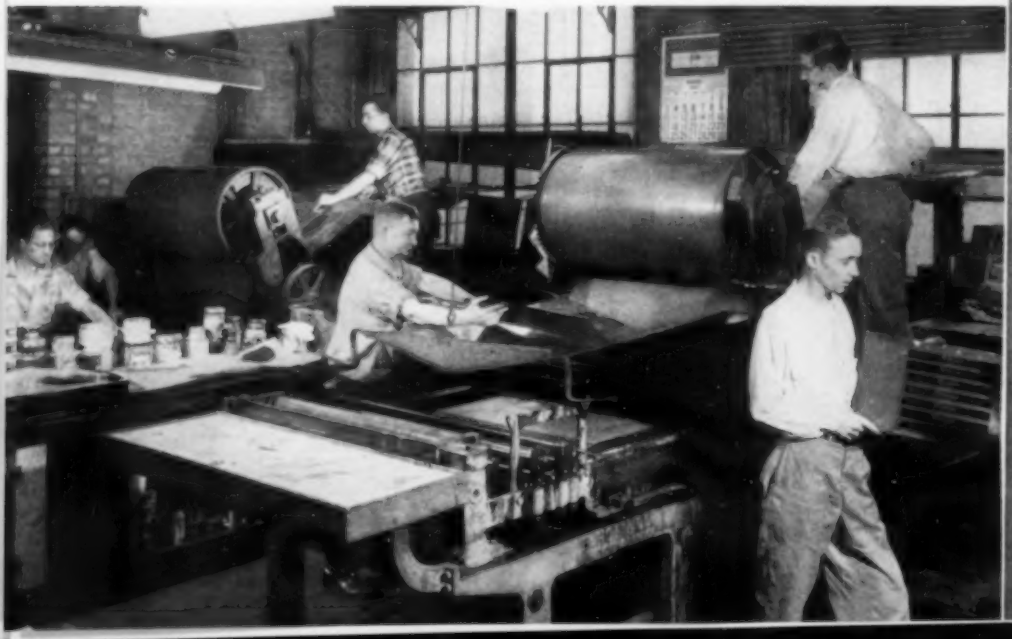
The metals we use include brass, bronze, aluminum, cold rolled steel, stainless steel, nickel silver, beryllium, zinc and monel. Processes used in producing these products include anodizing, enameling, embossing, etching, lithography, plating, alumiliting, screen stenciling.

*4254 W. Arthington St., Chicago 24, Ill.

Peelable Coat Protects Metal During Machining Operations

Just which process we elect to use on any particular item depends upon the metal, the shape and form

Acid-resistant ink being imprinted on blanks to be etched. Ink is applied on offset press.



Colors on the Fisher Body Plate (above) are familiar to everyone. On the Allied plate the border bands and letters are chromium; the two colors are white and medium light blue. The Jackson plate is bright aluminum and medium blue. The Monarch plate is gold, red and white (white squares in gold lattice work with a white border around same).

Here is a brief memo listing the chief operations on the Fisher Body plate: 1) Lithograph black on bright aluminum; 2) Litho blue on same sheets; 3) Litho ivory (on three windows) on same sheets; 4) Apply coat of clear finish, by roller coating, over face; 5) Shear sheets into strips or single rows of 3-color plates; 6) Feed strips through blanking and forming dies which also pierce the holes in same punch press operation.

of the product and the type of decoration specified. As an example let's consider the operations required on a control panel or escutcheon made of .020 type 430 stainless steel. This panel will have a series of debossed lines which are to be decorated in silver enamel.

After shearing the sheet metal to length, a peelable latex coating is sprayed over its face side to protect it against scratches. This coating is allowed to dry for about two hours. Then the sheets are moved to one of our 1000-ton presses where the pattern is embossed, the design formed, openings pierced, and the final blanking to size takes

place. Next the peelable coating is removed with solvent and the formed panels are dried in sawdust to prevent water spotting.

Color Buffing; Degreasing; Mask Spray and Bake

The panels are color buffed and sent through a trichlorethylene vapor degreaser to remove the buffing compound. A flat black primer is sprayed into the debossed lines through a precision metal mask. This coat is baked in a batch-type oven for 15 minutes at 300° F. When panels have cooled a silver enamel is sprayed into debossed lines through masks. This coat is baked for 30 minutes at 340° F.

Roller Coating Transparent Color on Sheet Metal

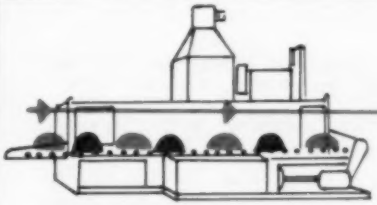
In practically all cases the sheet metal is decorated with the desired colors before it is blanked to size and embossed. For instance, bright aluminum sheets are run through a roller coater which applies a film of tinted resin-base material to produce a gold color which resembles bright jeweler's bronze. This coat is baked for 20 minutes at 340° F. The gold or bronze coating is just one example; any other color can be applied.

The room in which this work is done is pressurized; that is the air in it is under slight pressure, so that any draft through an opened door or any other opening will be outward. All air that enters this room is filtered twice. The concrete floor is kept clean, and is frequently dampened with water to prevent any dust from arising and circulating. If any dust or particles of dirt should alight on the aluminum before it is coated, or if any dust settled on the wet coating, this would be so magnified on the surface that the article would have to be rejected.

One of the 1000-ton presses turns out complete stainless steel escutcheons. Color decorations will be applied by spraying enamel through metal masks.

Making Etched Name Plates Calls for Several Operations

In the making of etched name plates the metal sheets are cut to size before they pass through the vapor degreaser. Then they are sent to one of the offset, flat bed lithographing presses where an acid resistant ink is used to imprint all areas of the surface that are not to be etched. In other words, the ink applied becomes a mask to protect these areas against the action of etching acid. [*To 52*]



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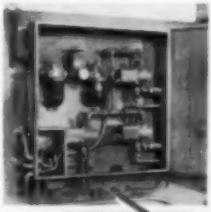
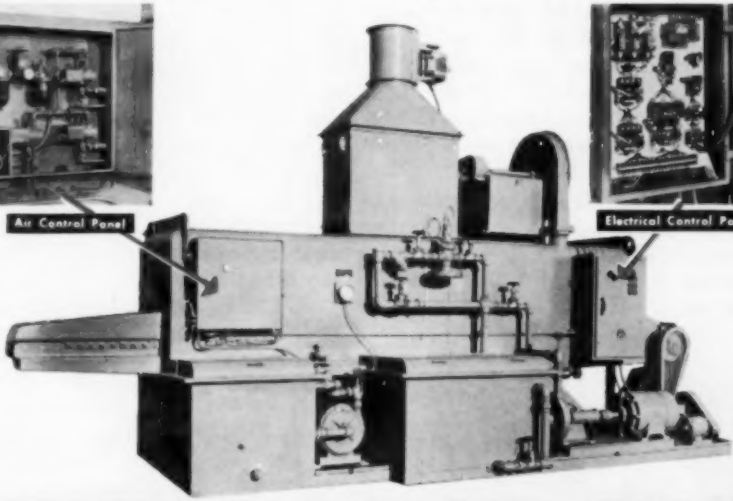
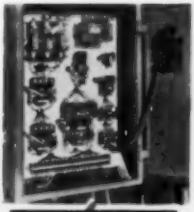
by PETERS-DALTON



Air Control Panel





Electrical Control Panel

P-D 3-STAGE WASHER FOR TORQUE CONVERTER HOUSINGS

Important savings of time and labor, along with efficient and economical operation, have been made possible through this 3-Stage Washer designed, engineered, built and installed by Peters-Dalton. Its function is to spray-wash both the inside and outside of torque converter housings. The operation is performed in a continuous action — first, the housings are fed to the machine on gravity rolls; then an air cylinder moves them over the inside spray manifold. This same motion holds back the unit following and moves the preceding unit onto a cross-rod conveyor for outside wash. Another cylinder positions each unit over the manifold and blocks the shaft opening. The inside and outside wash are both heated emulsified oil cleaners — room air blow-off removes excess oil. The exhaust has an eliminator and a filter box for entrapping overspray.

Whatever your requirements, finishing equipment to meet every need regardless of size, can be designed, engineered and manufactured by Peters-Dalton to perform efficiently and economically. The knowledge gained through more than a quarter century of designing, engineering and custom manufacturing, is available to you at P-D. Why not send us your specifications or prints? Our reply will be prompt. Just write, wire or phone . . . we'll be glad to tell you more.

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After the ink becomes tacky, powdered wax is dusted over the entire surface of the metal. This application of powdered wax takes place as the blanks move along on a horizontal metal belt conveyor. The waxed plates pass under a revolving camels-hair brush that lightly removes any excess wax and spreads the remaining wax evenly over the tacky inked areas.

Continuing on the conveyor the plates pass under an open gas flame which melts the wax on the surface so that it will flow into any pin holes. At the end of the conveyor line the treated sheets pass through a roller coater where an acid-resistant paint is applied to the back of the plates. This paint air dries in about an hour at which time the blanks are ready to be placed in racks and immersed in the acid tanks.

Sprayinig color into debossed lines on escutcheon through precision metal masks.

Etching Solutions for Various Metals

For etching brass, bronze, nickel silver, stainless steel and beryllium, a solution consisting of muriatic acid, iron chloride and sodium chlorate is used. Immersion time is from five to 20 minutes, depending on the depth of etch desired.

To etch aluminum, the solution generally used is composed of one part of muriatic acid and copper carbonate added to eight parts of water. Immersion time is from one to three minutes.

To etch zinc, a solution consisting of one part of (combined) sulphuric acid, nitric acid and sodium bichromate and eight parts of water is used. Immersion time ranges from three to ten minutes.

Upon removal from the acid bath, the sheets are rinsed in cold water and quickly dried in sawdust. The acid resistant ink on the face of the sheets and the masking paint on the back are stripped off with solvent.

Special "Quick Dies" Used for 3-Dimension Name Plates

The three dimension name plate is becoming increasingly popular. Perhaps the principal reason for this is that it is quite attractive. Added reasons are the speed at which these plates can be delivered and their moderate cost. This is made possible through the use of what we call "quick dies" made of hard, permanent material. They are formed photo-chemically rather than machine engraved. With these dies it is possible to produce two and three level plates embossed and debossed in a single die. They can

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Here...in the free Turcoat phosphating booklet...is the best solution to any paint adhesion problem. This new booklet describes the *complete* line of Turcoat materials—the coating compounds that assure *permanent* paint adhesion, slash rejects, require less complicated controls and are more economical to buy and use.

Only Turco offers a truly full line of government approved coating materials for use in *any* conceivable processing set-up prior to the use of organic finishes. Only Turco offers a staff of 160 technically trained representatives located in all parts of the country to give immediate 'round-the-clock service. No wonder Turco is adding new phosphating accounts at a phenomenal rate. There are many reasons why, when it comes to *paint adhesion*, more and more industrial concerns are turning to the Turcoat line. The Turcoat booklet lists them all.

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be made in less time than is required for a very simple piercing or blanking die.

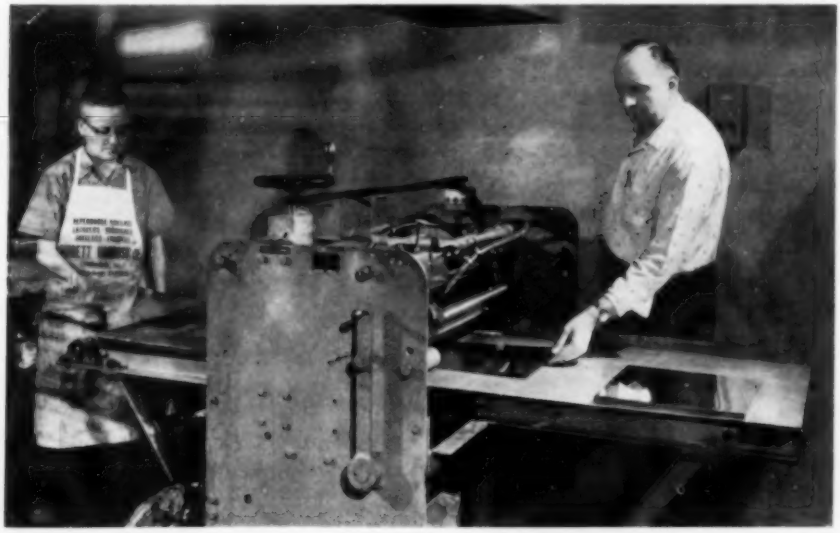
Unlike material that is procurable with an all-over pattern or impressed design, this process permits us to emboss portions of the metal with any design, while leaving other areas either blank or with different embossures. Letters are often embossed with a decorative design.

The sheet metal is sheared to correct size after which the sheets pass through a vapor degreaser. Then one or more colors are offset printed on a flat bed lithographing press. The inked colors are force-dried before the blanks go to the presses where they are embossed and debossed. Through extremely careful registration the color appears only in either the depressed or the raised areas. This is the only practical method of getting a clear-cut, neat color job on certain types and designs of name plates.

Lithographed Ink Colors Are Protected by Clear Synthetic

Now it is reasonable to assume that the ink colors lithographed on the metal surface are not as durable as the synthetic baking enamels sprayed on through precision metal masks. However, we compensate for this by applying a coat of clear, epoxy resin-base material over the face of the blanks to protect the ink colors. This clear coat is applied by roller coater and is baked for 15 minutes at 340° F.

There is a distinct advantage in this method of applying colors just where it is required on certain types and designs of name plates,



Applying gold transparent color on bright aluminum by roller coater. Photo, Gasway Corp.

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EFFICIENCY –

"Competency in performance – capacity to produce desired results."

(Webster's New International Dictionary)

CLINTON Efficiency

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in that no bright metal is necessary to separate the colors. Where colors are applied by spraying through precision metal masks, bright metal must separate the colors. This is needed to clean up etched plates by scraping and solvent wiping in order to produce a neat, clear cut job.

We mass produce name plates and all of the other products we manufacture; but it is not so simple as producing some items that can be hung on a conveyor to be cleaned, surface treated, finished or decorated, baked and finally removed at the assembly line or packing department. There are too many hand operations, too many methods of producing just what the customer wants, too many different designs and colors for simple automatic production. Each name plate, instrument panel, escutcheon, etc., is carefully inspected before it is packed for shipment.

Grand Rapids Varnish People Receive Service Awards

A service award banquet for seven members of the sales staff climaxed the 42nd annual sales convention of the Grand Rapids Varnish Corporation.

Shown in the picture, from left to right, are: Mr. Howard Lawrence, president of the company, Walter Williams of Hickory, N. C., whose 25 years of service earned him a handsome set of silverware in addition to the certificate, and Clarence Moulton of Grand Rapids who has headed Guardsman Cleaning Polish and Guardsman Upholstery Cleaner sales for ten years.

Five year award winners were William Klawiter of Williamsport, Pa., color stylist Bette Fuerst of Grand Rapids, Neal Weemhoff of Grand Rapids, Gerald Telman of Grand Rapids, and Carleton Murray of Asheville, N. C. At the far right is vice-president, Joseph Hager, who manages sales and promotion for the Grand Rapids Varnish Corporation.

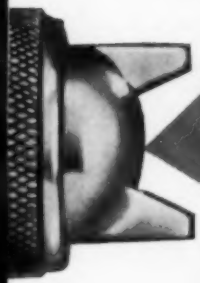
President Howard Lawrence, seven Service Award Winners, and Vice President, Joseph Hager.

YOUR

OVERHEAD

IS

OVER HERE



The overspray in your water curtain is a cause of overhead cost. While the overspray cannot be eliminated, the cost of removing deactivated paint from the spray booth tank and the water circulating system can be.

Periodic filtration of paint spray booth wash water prevents deactivated paint from settling to the bottom of the tank by removing the paint matte while it is floating. Recirculation of the paint in the system is prevented and water nozzles remain foul-free. Such maintenance costs are eliminated.

Only Delpark offers filtration for paint spray booth wash water. A Delpark field engineer will be glad to show you how you can save on operating and maintenance costs.

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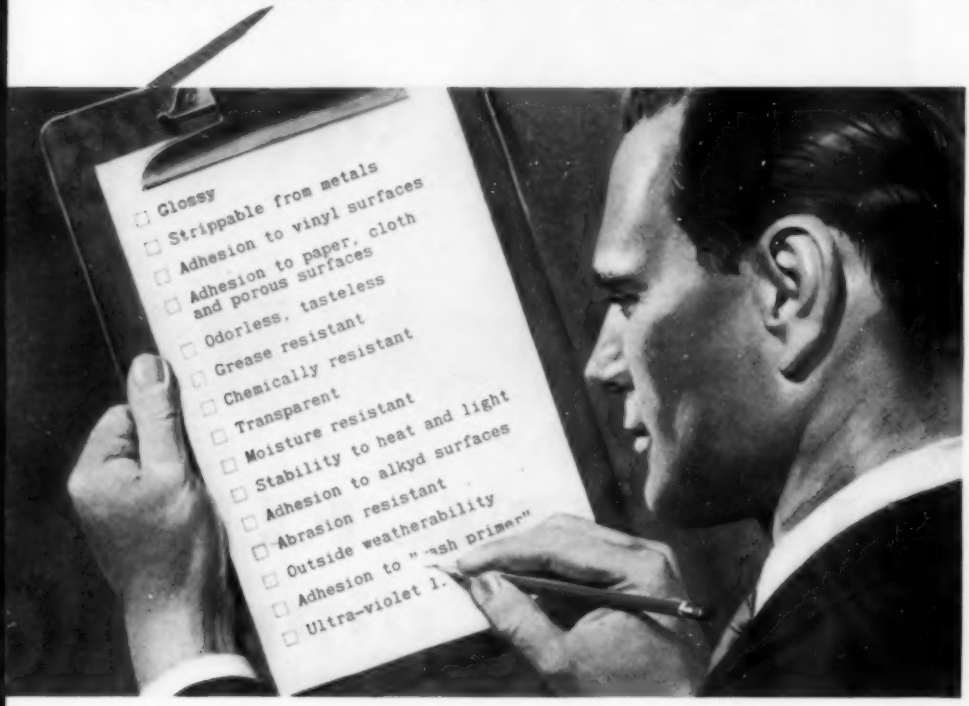

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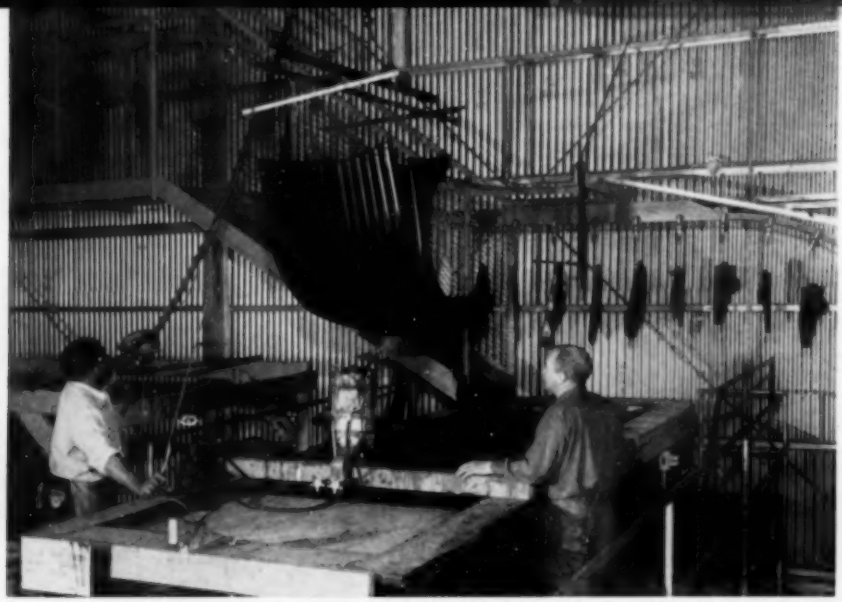

Parts being hoisted out of tank containing elastomeric dip coating, in Convair's Plant No. 2.

MASKING FILM put on by dipping

BY WILLIAM L. TIMM
Manufacturing Engineer*

IN PLANT II of the Convair Division of General Dynamics Corp., San Diego, Calif., a conveyorized dip coating setup is used to apply a temporary over-all coating or film of masking material to metal parts which are to be etched or "chemically milled".

First let's give a look at the etching process that follows this masking operation to learn why an over-all masking film is applied to the metal surfaces. Briefly, dynamic etching is a chemical milling process, whereby metal parts are masked and then dipped in corrosive solutions for the purposes of removing unwanted portions of metal from various surface areas. It resembles the process used in making our halftone cuts and line etchings for the reproduction of illustrations in newspapers and

*Industrial Engineering, Convair Division, General Dynamics Corporation, San Diego, California.

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magazines. It has the desirable advantage of accurately producing a variety of component details in a very short length of time. Otherwise some of these details could not be obtained. But until recently many were produced with milling machines, at costs which now seem fabulous when compared with the cost of dynamic etching.

As initially developed by North American Aviation, chemical milling was suitable only for the etching of aduminum. Now it is being used to process parts made of magnesium, steel, titanium and various other metals.

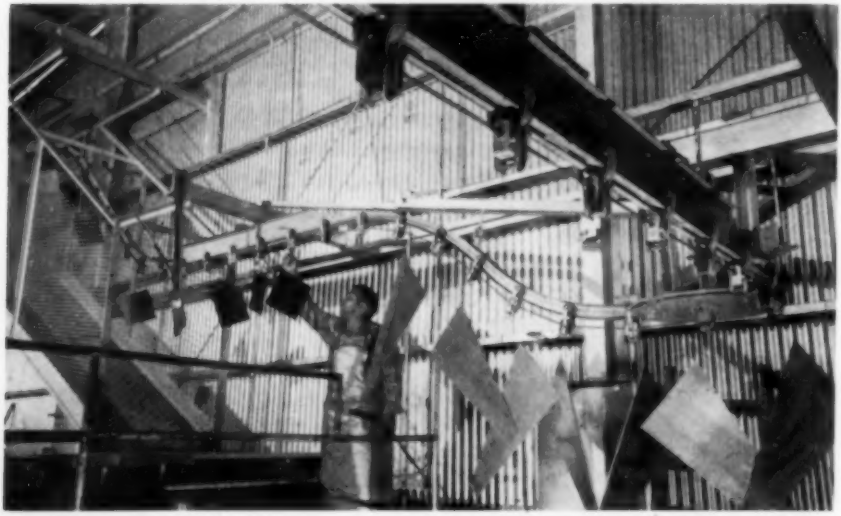
Strippable Coating Applied; Cured; Stencil Cut

In order to mask such parts, Convair uses an elastomeric strippable coating. This involves dipping each component in a tank containing the rubber-type coating solution and then, after the masking medium is dry, using templates and hand tools to remove all portions of the coating that covers areas to be etched.

Thanks to the conveyorized dipping and drying setup shown in operation in the accompanying pictures, the entire process of masking and etching can now be accomplished on a mass-production basis with very little labor and in a reasonably small floor space.

Due to the varied sizes and shapes of parts now being dynamically etched, the actual dipping operation is done manually. Then each coated part is suspended by means of an appropriate hanger or rack to an overhead conveyor.

As parts leave the dip tank, they are conveyed upward over a trough which catches excess coating material and directs its flow back into the dip tank. [*Cont'd. on page 66*]



Hand dip coated metal parts are moving upward, to left, toward overhead infrared tunnel.

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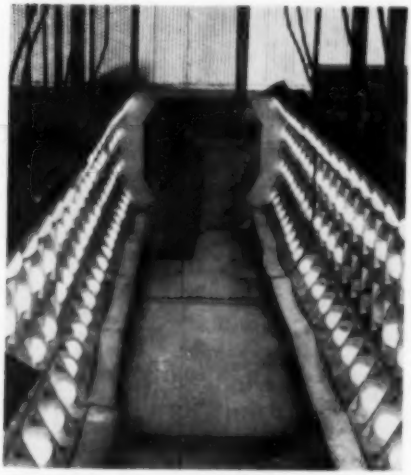
Next, at a point near the ceiling, the conveyor makes a right angle turn and carries the parts through an infrared drying oven. This heat gives the elastomeric coatings a semi-mild curing. The oven tunnel consists of two 25-ft. banks of 250-watt heat lamps. Each bank has 96 individual lamps.



Coated parts move through infrared tunnel.

Because its base is 9-ft. above the floor, the oven occupies factory space that would not ordinarily be used for production purposes; and because its bank housings are positioned over a steel platform, its heat output is shielded from drafts and confined to the specific area where it will do the most good.

Coatings on parts leaving the oven are said to have a "semi-mild cure" because they are tack-free, can be easily handled, and are just hard enough to accelerate the stripping operation which must subsequently be performed.

Author's Note: To answer some questions the Editor put to me in reference to the foregoing article, I submit the following supplementary information:

Elastomeric coatings on parts to be etched or "chemically milled" are knife-cut to the outlines of production templates, after which those portions of the coatings that are not needed can be manually stripped from the parts without difficulty. Mechanical scratching and stripping no doubt could be done, but it isn't exactly practical in view of present aircraft production requirements.

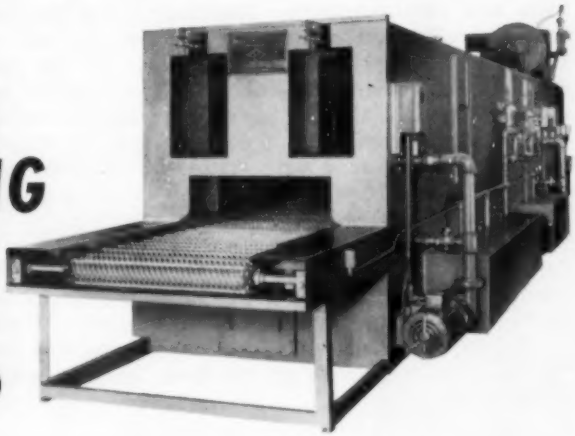
Both acid and alkaline etchants are being used, depending on the nature of metals to be etched in each instance. For example, aluminum parts are usually most responsive to alkaline solutions.

Parts are being etched to various depths, but straight-through etching is not generally desirable, because holes can be produced economically with standard machine tools such as punch presses and drills. Very deep etching is not always practical because etchants have a tendency to undercut surfaces supporting masking media—and sometimes it isn't possible to make a suitable allowance for undercutting in designing a mask.

Materials being etched range from very thin sheets to ultra-thick forgings and castings. They may be flat or they may have numerous configurations.

One great advantage of "chemical milling" is the fact that it permits the precise removal of materials from the sheet metal parts that have been formed, since this

NEW A-F "3-IN-1" WASHING MACHINE CUTS *METAL CLEANING* COSTS 50%



Because it is actually three machines in a single housing . . . using common tanks, spray systems, headers and drains . . . this new A-F "3-in-1" Washing Machine saves more than 50% not only in initial investment costs but also in operating and maintenance costs—over separate machines. In addition, this new A-F Washer provides for all cleaning operations in one efficient, central location . . . saves valuable floor space.

But that's not all! Two A-F Overhead Conveyors and an A-F Flat Wire Mesh Belt Conveyor carry parts through the automatically-timed wash-rinse-dry cycle and on to subsequent operations *without costly rehandling!* For example, one conveyor might take parts directly to assembly, another to painting. The conveyors can be operated simultaneously or independently.

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minimizes the cost of breakage during hammer and press operations.

Typical parts being etched are wing and fuselage skins. Because they are made from relatively heavy sheets and then lightened by using etchants to remove materials from areas where full sheet thickness is unnecessary, such parts do not have to be reinforced with stiffeners like older components made from relatively thin sheets. Therefore, they can be assembled with few rivets. Besides minimizing the cost of assemblies, this practice improves airplane performance by reducing the number of rivet-head "spoilers" which break up the flow of air around airfoils.

Airplane parts are etched by submerging them in tanks containing appropriate etchants. Mechanical agitators and temperature controls assure uniform etching action.

At the end of a predetermined processing interval, the etching action is halted by taking parts out of the etchant and immersing them in a cold water rinse tank.

Convair removes masks from etch parts by immersing the latter for three to five minutes in a stripping solution, after which the parts are rinsed in a high-pressure water spray. Rinsed parts are usually dried for two minutes in an oven with a maximum temperature of 200° F.

W. R. Brooks Now Directs Binks' Customer Research Lab.

The appointment of William R. Brooks to the position of Director of the Binks Mfg. Co.'s Customer Research Laboratory, has been announced by Burke B. Roche, president of the Chicago firm.

Mr. Brooks, who recently completed a 5-year assignment as field representative in the company's St. Louis area, will have the responsibility of conducting a monthly spray painting school, held at the firm's Chicago offices. This 5-day free course is offered to any person interested in learning the latest methods of spray finishing applications as well as proper maintenance of the equipment.

In addition to directing the school, Mr. Brook's research duties include fluid evaluation testing to determine the sprayability of new paints and materials. The results of these tests aid industrial and commercial users in the proper selection of spray finishing equipment.

Mr. Brooks has been with Binks since 1944, serving in various positions. These have included technical lecturer advising companies on specialized spray painting applications and liaison representative for the manufacturer's major accounts.

Airless Spray Painting Classes Offered by Bede Products

Bede Products Corp., Amherst, Ohio, manufacturer of airless spray painting equipment announces training school schedule for fall and winter months. Training and instruction classes for the operation and maintenance of Bede Airless Spray Coating Equipment will meet on the following days during the fall and winter season.

October	8 to 11
November	12 to 15
December	10 to 13
January	7 to 10
February	11 to 14
March	11 to 14

School sessions will start promptly at 9:30 a.m. on the first day of the scheduled training course, and at 8:30 a.m. on each succeeding day.

For additional information, write to R. T. Schafer, Assistant to the President, Bede Products Corp., Amherst, Ohio.

Do you need better ways to strip paint?

When tough finishes resist your present stripping methods, you may need help on some of these problems:

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2. How to strip zinc chromate primers without etching aluminum.
3. How to strip paint from vertical surfaces and undersurfaces where thin-bodied strippers run off without doing their work.
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5. How to strip paint, pigment residues, phosphate coatings and rust in one operation.
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for Corrosion Protection, Paint Base, Decorative Finishing

WHAT IS IRIDITE®?

Briefly, Iridite is the tradename for a specialized line of chromate conversion finishes. They are generally applied by dip, some by brush or spray, at or near room temperature, with automatic equipment or manual finishing facilities. During application, a chemical reaction occurs that produces a thin (.00002" max.) gel-like, complex chromate film of a nonporous nature on the surface of the metal. This film is an integral part of the metal itself, thus cannot flake, chip or peel. No special equipment, exhaust systems or specially trained personnel are required.

If your company is manufacturing or buying parts or complete assemblies made from or plated with any of the more common non-ferrous metals—zinc, cadmium, aluminum, magnesium, silver, copper, brass or bronze—you've probably already run up against the question of finishing these surfaces with a chromate conversion coating. These coatings are used to protect against corrosion, or to provide a base for paint or to provide a decorative finish for sales appeal or shelf life. Since chromate conversion coatings represent a relatively new means of obtaining these finishes, this digest of facts to consider may be of value to you.

1. THE COATINGS THEMSELVES. There are many brands on the market. All are similar in many ways. Each, of course, offers its own specific advantages and these may relate to operating techniques, performance under actual use conditions, cost, availability, etc. Naturally, you'll want to choose a coating that is widely known and accepted under both military and civilian specifications.

2. THE COMPANY BEHIND THE PRODUCT. Is it a reliable, established organization? Does it offer experienced technical service, both from the field-engineering organization as well as the home office and laboratories? The man who sells and services your installation should be thoroughly familiar with not only chromate conversion coatings and their applications, but also with the characteristics and performance of related finishing operations such as pre-cleaning, electroplating, painting, etc. This is most important since all steps of the finishing cycle must be functioning

properly for the satisfactory performance of the ultimate finish produced.

3. AVAILABILITY OF THE PRODUCT. Ideally, of course, the material should be readily available to you from nearby warehouses to avoid time loss in long distance shipping and to provide emergency service, should the need arise.

4. COST. Naturally, the initial price of the material is important to you. However, just as you consider ultimate cost when you are buying mechanical equipment, ultimate cost must be considered for these finishing chemicals. So, it will pay you to investigate consumption costs, labor costs and the other factors which go into the determination of ultimate cost. Further, cost alone gives no indication of product performance, so careful attention must be given to the purpose the finish must serve and the value that finish will add to your product.

5. FACILITIES FOR RESEARCH AND DEVELOPMENT. Perhaps the existing types of chromate conversion coatings do not include a compound that will accomplish exactly what you wish. Then, it is important to deal with a supplier who has adequate research and development facilities available to work with you to produce a material to meet your needs. Naturally, such a project is seldom completed overnight. But, with complete cooperation and confidence from both you and your supplier, chances are a satisfactory program can be completed.

These are the concepts of sales and service on which we, Allied Research Products, Incorporated, have developed and marketed the line of Iridite chromate conversion coatings . . . superior product performance, complete sales and technical service, easy product availability, economical cost, extensive research and development facilities. No doubt you are familiar with our line and have seen this trademark —

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—in our advertising, technical literature or on shipping containers in your plant. Remember this trademark when you're buying or investigating chromate conversion coatings for your company. It's your assurance of quality, economical products from a reliable and established company, skilled sales and technical service from both our home office and a national network of representatives, immediate availability from warehouses in strategic industrial areas and our willingness to work with you to develop new finishes to meet your needs, should the present line fall short.

For complete information on Iridite chromate conversion coatings, write today for your free copy of our technical data file. Or, for immediate advice, call in your Allied Field Engineer. He's listed under "Plating Supplies" in your classified telephone book.

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What Are DRIERS in Industrial Finishes?

By Eugene V. Goldstein

DRIERS USED IN the paint industry are catalysts which shorten the time it takes for a drying oil or drying type alkyd to change from a wet film to a hard dry film. These driers are metallic soaps of various acids, such as naphthenic acid, tall oil acids, and 2-ethylhexoic acid. Naphthenic acid is derived from petroleum and is not a pure compound, but a mixture.

Naphthenates are the most commonly used driers. They are stable and very soluble in the common thinners and vehicles. Some of the metals commonly used are cobalt, lead, manganese, calcium, iron and zinc. The activity of a drier is dependent almost entirely on the metal present and the amount of it.

Cobalt, Lead, Manganese, Calcium, Iron and . . . .

Cobalt drier is the most active one. It is a strong oxidizer and a "top drier." That is, it promotes drying at the surface of the film. The film underneath may be soft. Excessive quantities of cobalt drier will cause some vehicles to wrinkle. As a matter of fact, wrinkle finishes contain comparatively large amounts of cobalt to promote wrinkling.

Lead drier promotes polymerization and is a "through drier"; it aids hardening throughout the entire film. It is usually used in conjunction with other driers such as cobalt or manganese. Lead driers are not used in non-toxic finishes or in leafing aluminum finishes (where they would hurt the leafing properties of the aluminum).

Manganese drier has both an oxidizing and a polymerizing effect. It is often used in baking finishes. In air dry finishes it is generally used with lead, with or without cobalt.

Zinc is an auxiliary drier. It is often used with cobalt. It keeps the film open, allowing the film underneath to absorb more oxygen before the surface hardens. This slows the initial set of the film, but usually it does not affect the final drying time. Zinc naphthenate is also used to prevent wrinkling, as a wetting agent to shorten grinding time, and to increase the hardness and gloss of a film.

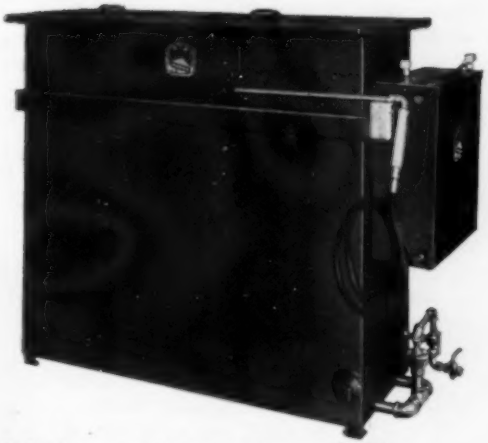
Calcium is another auxiliary drier. It is often used to stabilize lead against precipitation in certain lead sensitive vehicles. It is used in place of lead in non-toxic finishes and fume-resistant paints. Calcium drier is sometimes used as a grinding aid.

Iron exhibits a rapid polymerization effect at higher temperatures and is used in baking finishes where its dark color is permissible. Iron drier is also used as a wetting agent when grinding carbon blacks.

[*Continued on page 74*]

UP IN THE AIR ABOUT METAL CLEANING COSTS?

the answer is...



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[*Continued from page 72*]

How Some Pigments Help or Slow Drying

Various other metals are used as driers. Cerium and zirconium driers are increasing in use. Zirconium drier is quite versatile and has excellent color and color retention in baking whites.

Some pigments, such as litharge and reds containing manganese, act as driers. Other pigments, such as blacks, greens, whites, browns and blues tend to inactivate driers over a period of time. If the finish is used quickly all is well, but if the finish is stored for months or years before use, this effect is liable to occur. One remedy is to add more drier when the slow dry is discovered. Sometimes excess drier is put in the formulation to start with, to get a more positive drying action even after storage. Sometimes drier stabilizers or "feeder" driers are included in the coating to stabilize its drying power.

While driers are used in quite small amounts in finishes (generally 0.01% to 0.5% of each metal based on vehicle solids) they perform an invaluable function in greatly speeding up the hardening of the film.

Dore Joins Yarnall As Sales Representative

Yarnall Paint Co., Grays Ave. West of 54th St., Philadelphia 43, Pa., announces that Charles H. Dore has joined the company as a Sales Representative. Mr. Dore was formerlly associated in a sales capacity with two other nationally known manufacturers. His thorough knowledge and experience will be valuable to Yarnall customers.

Cunningham Advanced by Kelite

Lawrence W. Cunningham has been promoted to Southern Region Sales Manager by Kelite Corp., manufacturer of industrial chemicals and steam cleaning equipment.

Mr. Cunningham joined Kelite in September, 1956, as Dallas, Texas, District Sales Manager.

Mr. Cunningham will be in charge of Kelite sales in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and part of Kansas and Missouri. He will make his headquarters in Beaumont, Texas, where he resides.

Exchange-of-duties Training at Eastman Chemical

An "exchange-of-duties" training program has been announced by officials of Eastman Chemical Products, Inc. The new program has been designed to meet the company's need for men with broader knowledge and experience in all phases of the division's activities.

First exchange in the new program will involve J. H. Sanders and R. W. Miller. Sanders is currently the Cleveland District Manager and has been with

J. H. Sanders (standing) and R. W. Miller discuss new responsibilities under Eastman's "exchange-of-duties" training program.

the company in this and other capacities since 1946. Miller who has been with Eastman since 1948 is presently Product Manager for all industrial chemicals manufactured by Kodak's Texas Eastman division in Longview, Texas.

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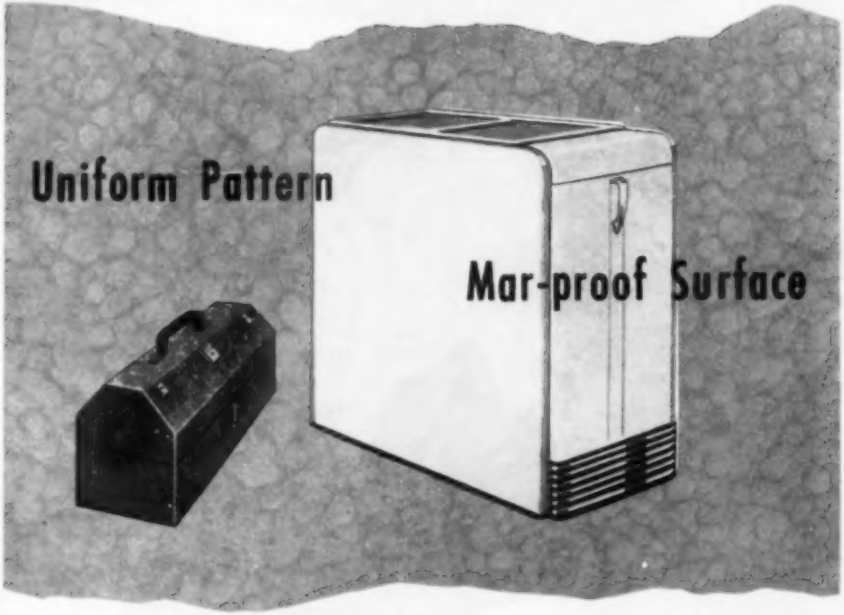

Here is a new concept in Hammer finishes. Despite varying reductions with thinner, or changes in air pressure of 5 to 10 pounds, Tousey Hammercote applies smoothly with amazing uniformity in pattern.

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GRAINING
With Rotary Machines

By P. C. BARDIN, Associate Editor

THE PRINCIPLES of roller coating have been extended to include both horizontal and vertical machines for the transfer of wood grain, marble, textile and leather designs to both flat and curved surfaces of metal, plain wood, composition hardboard, glass and plastics.

Horizontal Roller Graining Machines

Let us consider some of the typical horizotnal roller machines used for the transfer of wood grain or other designs. Usually you see a 4-roller machine for coating one side of flat stock like ply panels, etc. It has a semi-hard rubber applicator roller, a chrome plated "design" (or graining) roller, a rubber inking roller, and a power-driven rubber feed roller. The rubber rollers referred to do not necessarily need to be solid rubber, but may be steel rollers covered with rubber to a thickness of from say ½ to ¾-in. The hardness of the rubber used will depend upon the purpose for which the particular roller is intended.

The design roller is etched with the wood grain figure or design (marble, leather, etc.) and then chrome plated to resist the wear of continuous scraping by the doctor blade. The thickness of the chrome plating must be carefully controlled so as to avoid the possibility of partially hiding some details of the wood grain figure or design. The design roller and the applicator roller should run at synchronized surface speeds. A pan in which the inking roller revolves contains graining ink. Ink is picked up and transferred to the design roller by contact. A doctor blade scrapes off excess ink from the design roller, leaving ink only in the etched grain pattern.

The grain pattern is picked up by the applicator roller (which makes contact with the design roller) and is transferred to the sheet stock or flat work which is fed through the machine. A doctor blade contacts the semi-hard rubber applicator roller to clean the surface of any remaining inked design before it again contacts the design roller. This is necessary be-

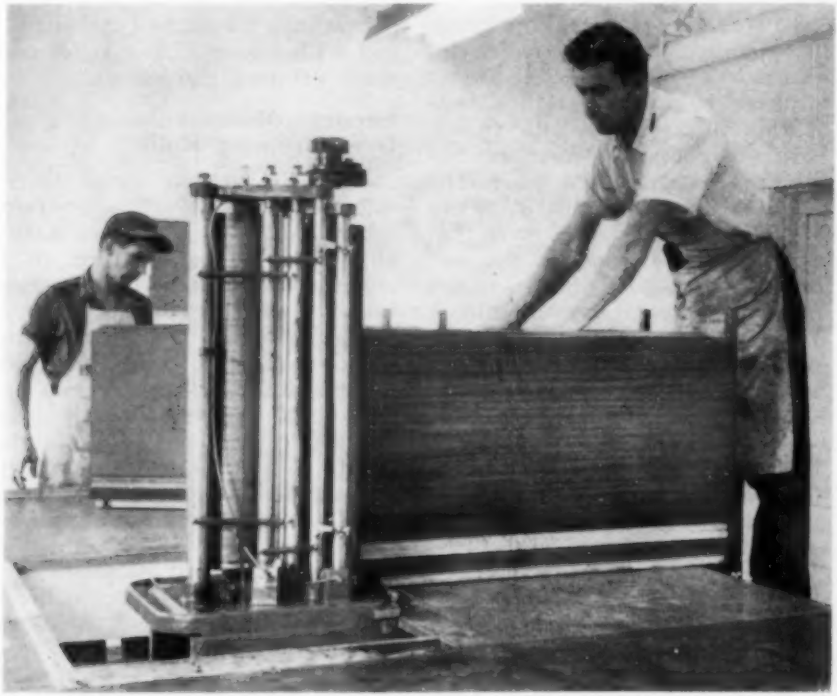
cause if any part of the inked design were left on the applicator roller it would blur the grain figure when it contacted the design roller for a new impression.

The doctor blades (or scraper blades) on any roller type graining machine must be absolutely straight, true and sharp, with the scraping edge ground and honed. Otherwise, traces of unwanted ink will remain on the surface of the rollers to blur the following design pattern—or they may be deposited on the surface of the sheet stock being printed.

The vertical roller graining machine is necessarily different from the horizontal machine. Obviously a vertical inking roller cannot operate in a pan of graining ink. This type of machine has a chrome plated design roller and a gelatin composition or rubber applicator roller.

Vertically Mounted Roller Graining Machines

A controlled quantity of ink is pumped from a reservoir to the top of the design roller ahead of the doctor bar or scraper. Excess ink flows down the design roller to the reservoir to be again pumped up to the top. On this machine doctor blades function exactly the same as



Graining fine mahogany cabinets with a vertical-roller power feed graining machine.

on the horizontal machine, but in this case the doctor blades oscillate in a vertical plane to better clean the surface of the rollers.

The feed roller on the vertical machine illustrated in this article is a narrow wheel (1-in. to 2-in. face) mounted just above the table of the machine. The surface speed of this feed roller must equal that of the applicator roller.

It is a good plan to reverse the applicator roller once a week to prevent any permanent sag from developing in this relatively soft gelatin material, due to gravity.

Graining TV Cabinets on Vertical Roll Machine

To transfer wood grain printing to an assembled product—for instance a TV cabinet—the cabinet is placed in a wood jig. The base of this jig is fitted with rubber strip which bears against the machine's steel faced feed roller. The jig has ballbearing, swivel rollers to facilitate movement over the table of the machine. In the machine table a series of idler rollers hold the jig containing the cabinet in close alignment with the applicator roller. All the operator has to do is to hold the top part of the cabinet in contact with the applicator roller as the cabinet passes by. The usual procedure is to print one side of the cabinet, then the top and finally the other side.

Machine With Horizontal Rolls Has Automatic Power Feed

Another machine well suited to transferring wood grain reproduction onto the sides and tops of built-up or partially assembled TV cabinets and similar products has horizontal rollers and a means of mechanically moving the cabinets over a graining roller. One of these machines is illustrated in this article.

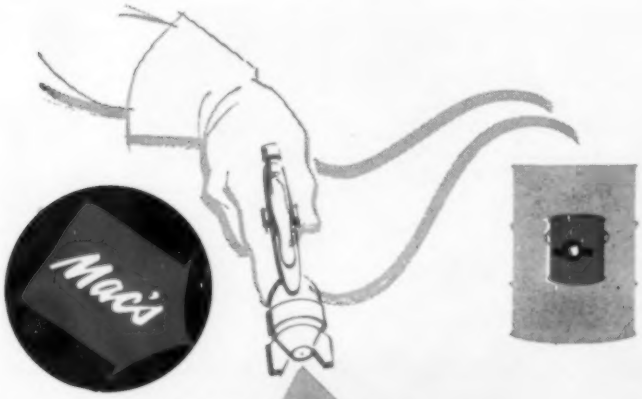
The operator places a cabinet on the carriage where it is automatically positioned and held firmly by four air-operated clamps inside the cabinet. Rubber cushions on these clamps hold the sides and top of the cabinet perfectly rigid so that regardless of how flexible it may be in certain areas, the entire surface will be accurately and completely printed.

A push button starts the graining cycle. As the carriage moves horizontally the cabinet makes contact with the applicator roller and grain printing takes place.

Carriage Moves Cabinet Over Graining Rolls

When the carriage begins the return trip to its starting position, the entire graining unit automatically drops out of position to a slightly lower level so that the cabinet does not make contact with the applicator roller. At the starting point the cabinet is automatically turned 90° or to right angles before it begins another trip over the applicator roller to grain the top. Again it returns to starting position and is automatically turned 90° to align it for graining the remaining side.

The graining unit includes a 3-in. hard rubber feed roller which operates in the ink pan. Graining ink is transferred by contact to a 6-in. chrome plated design roller. A 6-in. soft rubber applicator roll-



5-Gallon Can
at Drum Price

Order a 5-gal. can at drum price and Convince yourself.

Satin Finish Wooling Lacquers

These are ideal lacquers for use where a satin sheen finish with a smooth, silky feel is desired, without requiring a costly rubbing operation.

Their intrinsic and economical values are fully appreciated when used in place of the regular semi-flat lacquers, to produce the much desired satin, velvety finish.

Mac's Satin Finish Wooling Lacquers, if steel wooled only, or if steel wooled with wax using 3/0 or 4/0 steel wool, will produce a very smooth, silky, and scratchless finish that feels more silky than the regular satin finish lacquers. The steel wooling process is inexpensive and easily done.

Mac's Satin Finish Wooling Lacquers are made in different sheens which may be a flat comparable to a 20 sheen or as bright as a 75 sheen lacquer. They may also be used without steel wooling and will produce a fuller and more homogeneous finish than the regular semi-flat lacquers.

Mac's Satin Finish Wooling Lacquers are available in water white light resistant, for use on white or pastel finishes, or in the regular lacquers for the darker shades such as mahogany, walnut, etc. The water white satin finish wooling lacquers are universal lacquers and may be used on both white and medium to dark finishes wherever space for storage is important.

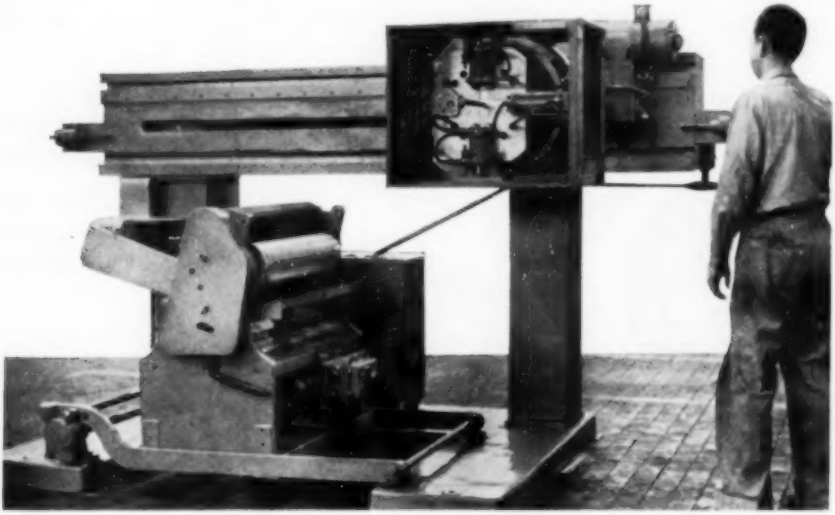
When ordering, advise sheen desired and whether you want water white or regular satin sheen wooling lacquer.

"Eighty-two Years of Service"

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD **PHILADELPHIA 36, PA.**



The cabinet, held firmly by compressed air clamps, moves easily and smoothly by power from right to left so the ground coated surface makes close contact with the applicator roller which prints the grain pattern. On the return trip a cam lowers the graining unit, so it doesn't make contact with the cabinet. Photograph, courtesy of Schmutz Mfg. Co.

er picks up the inked grain from the etched design roller. Two oscillating doctor blades, ground and honed to a 45° angle, are used to continuously clean both the design and applicator rollers.

Some concerns have two sets of doctor blades so that the blades on the machine can be changed as often as four times daily. Sharp blades assure the printing of perfect grain detail and help to prolong the life of the design roller. At the end of the day the graining ink should be removed and strained back into a container, and the machine should be washed clean with solvent.

The cycle which automatically transfers wood grain to three sides of the cabinet shown in the illustration requires only two minutes. Upon completion of the graining operation the operator removes the cabinet for a drying or baking of the graining.

Graining Machines for Other Than Flat Stock

Some special graining machines are used to transfer wood grain, leather, marble or textile designs to slightly curved surfaces or to a surface that has a slight offset, say not to exceed about ⅛-in. A portion of the machine, including an ink pan, inking roller, design roller and applicator roller, is mounted on an arm which is so designed that it permits the unit to move a limited distance in a vertical plane. This is done so that the applicator roller may closely contact the surface of the product being printed,

How many places can you use push-button touch-up?

Damage to the finish of your product happens anywhere—from your own assembly department to the final customer. With the Sprayon Self-Spraying Touch Up Tool *any* employee quickly repairs the damage *right where it happens.* Costs go down. Eye-appeal of your product and customer satisfaction go up! Sprayon goes right to your source for your own touch-up finish, custom loads the Tools for you under your own label. Exclusive Sprayon features mean even unskilled help do a factory-match job in minutes ...for pennies! It's a complete paint shop in a can!

Write for FREE touch-up folder.

Free training movie, "The Finishing Touch" (16 mm, sound, color, 11 minutes) Write for information.

SPRAYON *Self Spraying* TOUCH UP TOOL ®

SPRAYON PRODUCTS, INC.

2071 East 65th Street • Cleveland 3, Ohio

and at the same time follow a slightly curved contour. The table of the machine is mounted on ball-bearing rollers to permit free and easy movement of the wood jig in which the product is clamped.

The product to be printed is mounted firmly in an advantageous position in a wood jig or holder for the transfer operation. The object being printed must remain solidly firm throughout the operation; otherwise, the grain figures or design will be blurred.

Product Remains Stationary; Graining Roller Moves to it

The applicator roller is made of gelatin composition; its texture must be soft enough so that under pressure, the roller may be indented sufficiently to print both levels of a slightly offset surface.

Unless the room in which the printing is done is air conditioned, so that a constant temperature and relative humidity prevail throughout the year, it may be necessary to have one set of gelatin composition rollers for hot weather and another set for cold weather.

Storage of Soft Rollers To Prevent Distortion

Great care must be used in handling and storing these relatively soft gelatin composition rollers when they are not in use so that they will not be damaged, and to prevent any sag due to gravity. To remove the possibility of soft rollers becoming distorted while not in service some users store them in a closed rack where each roller is mounted horizontally between centers and slowly but continuously rotated by power.

Acknowledgment: Some assistance in the preparation of this article was received from Mr. E. D. Hamant, president of the Hamant Tool Co., Inc.—Editor.

W. J. Stoddard, Neilson Chem. Southeastern Representative

Mr. Willis Stoddard has been appointed direct factory representative of Neilson Chemical Co., Detroit, to work with the F. H. Ross Co. in Charleston, North Carolina. The Ross Co. is the southeastern distributor for Neilson's metal cleaning, metal conditioning, and phosphate coating and alkali metal cleaning materials. Mr. Stoddard's job is to work with the Ross Sales representative for the distribution of Neilson's line.

Finishing Systems by Granco

The above title is on a new 12-page (8½ x 11-in.) booklet, printed in two colors, wherein you see illustrated and briefly described "industrial finishing systems from start to finish." Included are metal cleaning and phosphatizing facilities, dryers, flow coating, dipping and spray painting equipment, conveyors, ovens, furnaces, air-supply systems and dust collectors. For a free copy, write to Granco, Inc., 317 Thirty-second St. S.W., Grand Rapids 8, Mich.

Interchemical Changes Men in Metal Decorating Sales

In the Metal Decorating Division of Interchemical Corp., Harry Linkletter, a V.P. of Interchemical's International Division, will transfer on December 1 to the Finishes Division to assume the duties of Assistant Director of Sales.

William E. Bleier has been made Assistant Atlantic District Sales Manager.

Thayer R. Brown is now Manager of Technical Service. Brown, who has acted in this capacity for many years on a local basis, now assumes national responsibility.

DuBOIS PAINT STRIPPERS

are the fastest and most economical

Modern epon and epon-based finishes need a tough paint stripping compound that works fast and gives long solution life. That's why many of the world's greatest manufacturers of consumer goods use DuBois specially built paint stripping compounds. They rely on DuBois service to get their job done fast and economically.

Our techniques can work in your operation too. Write us today or call Industrial Division collect.

The DuBOIS Co., Inc. General Offices, Cincinnati 3, Ohio

Representatives and Warehouses Coast-to-Coast

High-gloss enamel holds up down on the farm

TRACTORS are a farmer's pride and joy, but you'd never guess it from the treatment they get. Baked in the sun, bulldogged through swamps—a good tractor finish needs the resistance of a bridge paint, with the looks and gloss of an automobile topcoat.

Famous Du Pont "Dulux" enamel is just such a finish. This hard high-gloss finish gives the sort of service that keeps the farmer happy—makes life easier for finishes foremen, too.

Because of its higher solids content, "Dulux" covers more area with less paint. It's simple to handle and safe to store. Resists pigment separation and viscosity changes. And even on sharp edges, "Dulux" gives a smooth, high build.

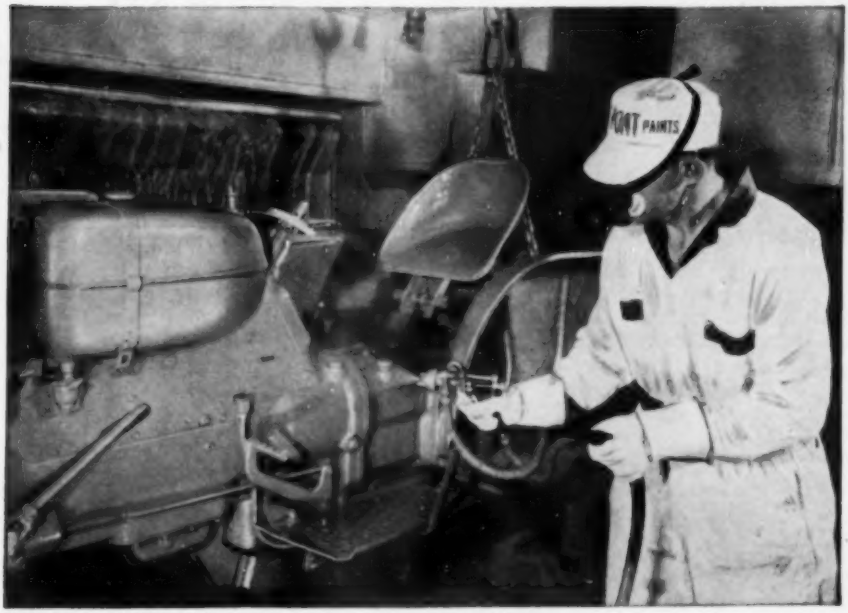
Leading manufacturers in many fields report that "Dulux" applies beautifully with hot spray, cold spray and steam spray, and dries hard under a wide variety of conditions.

Learn how "Dulux" may improve your own finished product, save time and money in the process. Contact your local Du Pont technician, or write direct to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



Conveyorized "Dulux" line with conventional spray equipment delivers fast output for tractor manufacturer. "Dulux" gives smooth paint coverage, even on sharp corners and fender edges. This is a finish any manufacturer could be proud of.

Despite exposure to sun by day and dew by night, high-gloss "Dulux" still resists chalking and lifting, keeps its original good looks. It has the hardness to resist chipping, too. Even the motor block—too hot to touch—has a "Dulux" finish.

Du Pont Industrial Finishes

Chemically engineered to do the job better

EDITORIALS

Design of Product for Automatic Production

Today manufacturers are devoting much thought and attention to the design of their product. The *Industrial Bulletin* of Arthur D. Little, Inc. traces the history of design from the craftsmen of old who were not consciously concerned with design through the period of Walter Gropius who in 1919 started the first, or one of the first groups that earned the right to call themselves designers. Much progress has been made since then. And there is a need and opportunity for more progress to be made.

The advent of the machine age originated the need for product design. We have lived through the age of "functionalism." We have seen products that were supposed to remain stationary designed with so much "zip" that they seem ready to take off at any moment. Some designs were concocted to please only the customer, without much thought given to any manufacturing processes.

Now a new era has entered the picture—automation. This may call for additional changes in the design of some products. It will also require closer cooperation between the designer and the production department. Up to the present time the sales department has often been the driving force in calling for a redesign of the product.

Automatic production and finishing systems are here to stay. They represent milestones of progress equally as important as the first machines that replaced hand crafting. Most manufacturers who have a design department within their organization have already made some changes in product design to conform with the automatic system. Other manufacturers who do not have such a department may well consult with one of the many capable commercial designers that are available.

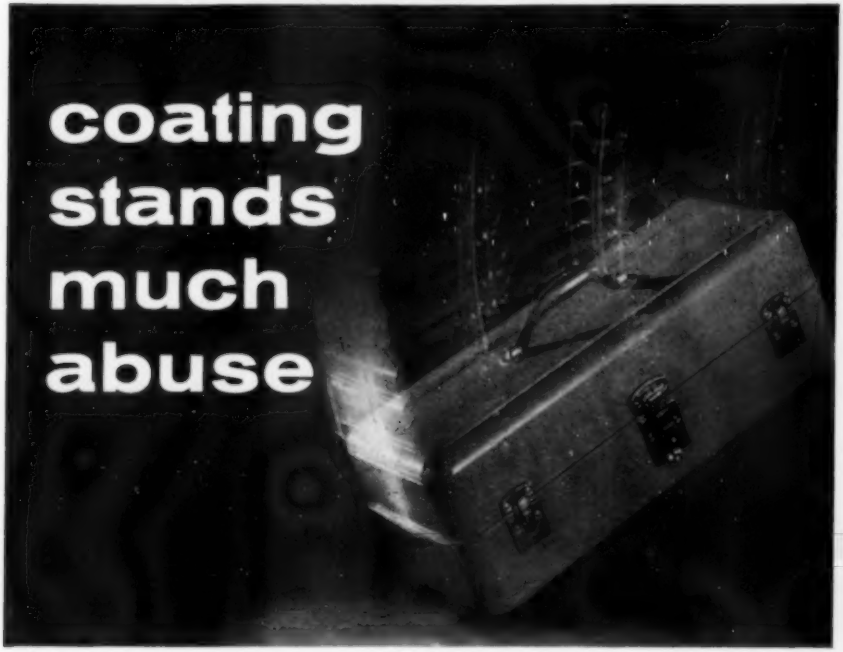
More Plants Are Being Air Conditioned. Why?

Is your plant air conditioned? The trend today is definitely toward air conditioning of industrial plants. Of course, at first glance, geographical location of the plant may have something to do with how soon air conditioning may be installed. But it should be remembered that in summer the thermometer gets just as high in northern cities as it does in the south. The season may not last as long in the north, but it's just as hot while it lasts.

A large manufacturer of air conditioning equipment made a comprehensive nation-wide survey of existing plants and proposed plants in which air cooling has been or will be installed. Based on this survey it is estimated that country wide, 75% of the new plants and 50% of all plants will be air conditioned by 1960, and that 90% of all plants will be so equipped by 1970.

Several factors influence this trend toward providing a cool, comfortable place in which employees can work throughout the entire year. One fac-

when it's UNICHROME plastisol



You can drop a coated product, even hit it sharply . . . yet nothing happens to the finish. Subject it to outdoor exposure, moisture, acids, alkalies . . . still no harm. *That's a Unichrome Plastisol Finish.*

Unichrome Plastisols are vinyl coatings with plenty of "give". They take physical abuse without chipping . . . corrosive service without peeling. They have appealing gloss . . . come in a variety of colors . . . apply by all usual production methods. Suggested uses: Any metal product that can be baked at 360°F, such as tool or tackle boxes, tanks, stools, business machines, carts, trays, etc.

Get details from Metal & Thermit, leader in development and production of plastisols.

PLATING MATERIALS
ORGANIC COATINGS
TIN & TIN CHEMICALS
CERAMIC MATERIALS
WELDING SUPPLIES
METALS & ALLOYS
HEAVY MELTING SCRAP

METAL & THERMIT
CORPORATION
GENERAL OFFICES: RAHWAY, NEW JERSEY
Pittsburgh • Atlanta • Detroit • East Chicago • Los Angeles
In Canada: Metal & Thermit—United Chromium of Canada, Limited, Rexdale, Ont.

tor is the competition for skilled help. It's a fact that non-air-conditioned plants are more troubled with absenteeism, loss in efficiency, loss in production and an increase in rejects. Now all of these factors can be proved by actual records in your own plant. Check up by months during the past several years. The results may come as a big surprise.

The air conditioning of finishing rooms offers added advantages. With all of the doors and windows closed throughout the entire year there will be no dust to settle on freshly coated work. This means less rejects. With room temperature, humidity and paint temperature controlled throughout the year a more uniform and better quality of finish will be obtained. Air conditioning is a good investment.

Who Is Going to Play Formulating Chemist?

★ Every year manufacturers of raw materials for the paint industry develop hundreds of new materials and resins. Many of these products will be classed within already established groupings, while some may come within newly discovered classes. Paint chemists must be constantly aware of these developments. . . .

In the finishing industry we sometimes find finishers who have decided to become paint chemists; they have done some studying in their spare time. So when the technical representative of a coatings manufacturer arrives he may not be told any of the specific conditions which the coating must undergo. Instead he may be told that the finisher wants, let us say, "a baking phenolic that will cure in 30 minutes at 300° F."

Experienced salesmen have found that it is not tactful to argue with these opinionated individuals. Accordingly Mr. Salesman proceeds to get a sample from his laboratory of the kind of coating requested. An order for several drums of material may follow. Then perhaps "the roof falls in." Complaints are received about yellowing of the finish. The finisher is disturbed; he puts the blame at the doorstep of the coatings manufacturer. There is no doubt as to where the fault actually lay, but in a competitive field like finishing the customer must always be right. While he needed a highly chemical resistant coating, of which the phenolics as a class are excellent, he did not consider the possibility of yellowing.

Raw materials manufacturers, I believe will admit that each material has certain short-comings. Ureas, for example, may "bloom" at higher temperatures; melamines may be brittle; vinyls may be attacked by ammonia fumes; acrylic enamels may be attacked by gasoline, naphtha, etc. This does not mean that each material is not good. A skilled paint chemist can blend and modify some of these resins so that one fills in the weak points of the other until a well balanced formulation is obtained for a satisfactory material.

In one plant, recently, a finisher insisted on getting a "catalyzed alkyd." There were many explanations of what he was really seeking, but it was necessary for the coatings manufacturer to stretch the truth somewhat in order to meet the conditions imposed.

Some finishers, particularly the younger men in the field, are fairly

(Continued on page 92)

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

control color drift

COLOR DRIFT BOWLES CONTROL SYSTEM

▶ A TIME-PROVED SYSTEM—A BASIC NEED

COLOR DRIFT IS COSTLY! . . . in product finishes, maintenance paints, packaging colors. But with the BOWLES COLOR DRIFT CONTROL SYSTEM *you can control color drift.*

IN INDUSTRY, paint color uniformity can be assured on—and in—manufactured products, plants, industrial installations, tools and equipment.

IN TRANSPORTATION, costly rolling equipment, ships, aircraft, terminals, wharves, signal systems, etc., can always have paint colors that match.

IN PACKAGING, uniform colors are vitally important brand identification features on all shipping cartons, labels and containers.

The BOWLES COLOR DRIFT CONTROL SYSTEM is TIME-PROVED, easy to use, costs little—saves much. Ask for interesting facts—TODAY.

Bowles

COLOR DRIFT CONTROL SYSTEM

BOWLES COLOR DRIFT CONTROL SYSTEM
a Division of Bowles Printing Corporation
75 Third St., San Francisco 3, California

Please send details on your Color Drift Control System without any obligation.

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City_____ State_____

well educated in chemical technology. However, unless one is constantly in full time contact with finishes formulation techniques, he cannot hope to keep up with all new material developments. To impose certain restrictions on a formulator, on the basis of a superficial knowledge of a few raw materials, is indeed courting disaster. We are in an age of specialization. I believe that it is best to leave the formulation of finishes to the experienced specialist.—*J. Seal.*

To Get Service From Your Paint Supplier

★ Practically every company wants "good service" from its finishes supplier. When the user wants a new coating, a shipment of finish, or when he has a complaint he expects prompt action. The action is not always as prompt as desired, however. I offer the following suggestions for better service.

Be sure the manufacturer of your industrial finishes values your account and is willing and able to give you service. He may value your business. Then again, he may consider yours a nuisance account because you buy too little or too many items in small amounts; he may not be set up to make easily the items you want; there may be other reasons. Another possibility is that he may believe in selling on price, not service. A little inquiry and experience will help you to find a finishes manufacturer that will give you service—if you don't have one already.

If you want a new finish or have a complaint, let the paint company know as soon as possible. Don't wait until the last minute and then expect your problem to be solved in an hour. No paint company that I know of has men in its laboratory just sitting around waiting for something to do. People in the laboratory are busy almost all the time, and at times quite rushed. If more than a small percentage of its customers wanted service at once, the laboratory would be swamped.

The sooner you get your request in, the sooner it is likely to be worked out. Even if your problem is put ahead of everything else it may take a while to solve it. Some tests, such as for settling or stability take a certain amount of time. The more time you can give the paint company the better.

When you have a complaint tell the finishes manufacturer exactly what is wrong. This seems obvious but often the man complaining will not relate the defect as it appears to the eye; instead he will give his guess or opinion as to what caused the defect. Instead of saying that the finish is low in gloss he may say that the finish is "kicked out." Instead of saying that the finish has orange peel he will say it is too heavy in viscosity—which may or may not be true.

There is another possibility of error. Many special terms are used in the paint industry, such as silking, floating, flooding, livering, bodying, webbing, alligatoring, jelling, cratering, etc. The layman may not know exactly what all of these terms mean. Often he uses one erroneously when voicing a complaint. Quite often the paint company has to send a man to the customer's factory before they can find out what the complaint really is.

When ordering a sample of a new coating the user should be sure that the paint company knows just how the coating is to be used, what it goes on, and what its performance must be. Remarks such as: "Didn't I tell you we put the finish on zinc as well as steel," or "By the way, we don't spray all of the parts; some of them are dipped," often mean the finish has

(Continued on page 94)

from a tickle
to
TONS
Hydraulic Controls
by NORTH AMERICAN mfg. co.
Cleveland 5, Ohio
for PRESSURE, FLOW, and RATIO control...
EDGE-GUIDE control... and AUTOMATION
For quick, reliable response to any demand, use a North American high-gain hydraulic amplifying relay. Its simplicity of operation as well as its rugged, compact construction provides a versatile component for the designer of control systems.
The relay is small enough to be mounted close to the process and its pressurized return permits installation above or below the reservoir, and in any convenient position—on its side, upside-down, or at an angle.
Complete assemblies of relays, signal systems, pump units, and cylinders or individual components are now available to both users and original equipment manufacturers. North American engineers will be glad to discuss your application with you.
Write now for Bulletin 1-001.

to be reformulated or will not perform as well as it could.

A paint company is likely to find that complaints come chiefly from a certain group of customers. These are likely to be customers who have a poor finishing setup that cannot turn out a good job, or customers who have little knowledge of industrial finishes.

It is surprising how many firms that use an appreciable amount of finishes—say five or ten drums a month—have no one who understands paint. They will do something definitely wrong and not even know it. The user who has a ship-shape finishing department that is adequate for his needs and who knows something about finishes will not need too much service. It pays to be in this position. It is easier to get service if you don't demand too much of it. —*E. V. G.*

DOW CORNING
SILICONE
GREASES
won't melt or drip
at + 450 F
Slash lubrication costs with the most heat-resistant greases known. Silicone lubricants withstand continuous high temperatures and corrosive fumes without oxidizing, decomposing, gumming . . . there's no dripping on newly finished parts.
Ideal lubricants for conveyor bearings, cams, gears, valves, other moving parts.
Send for FREE booklet describing how you can improve lubrication and reduce maintenance with Dow Corning silicone lubricants.
Address Dept. 6622
first in silicones
Dow Corning CORPORATION
MIDLAND, MICHIGAN

Octagon's New Distributor

Octagon Process, Inc., Staten Island, N. Y., has announced the appointment of the W. D. Forbes Co., of 129 Sixth Ave., Minneapolis, Minn., as its distributor in Minnesota.

The Forbes Co. will carry all of the Octagon specialty chemical lines, including cold and hot metal cleaners, safety solvents, paint strippers, carbon and rust removers, rust preventive oils, bright dips and phosphatizing compounds.

Wilson, Jr., to Lowe Bros.

Richard I. Wilson, Jr., has been appointed an Industrial Sales Representative for the Lowe Brothers Co., manufacturer of finishing materials, Dayton, Ohio. Wilson will represent the company in the Philadelphia area. He now resides in Wayne, Penna.

STEEL WOOL

with a . . 'VELVET TOUCH'

Sun Ray quality assures fine finishes!

Feel the long, soft, resilient fibres in *Sun Ray* Steel Wool! Try this superior product during your next furniture finishing operation. You'll agree that its texture and cushiony "give" leaves a more uniform smoothness on all fine finishes.

Send for a generous sample of *Sun Ray* Grade 0000 Steel Wool. That's our finest grade—carefully manufactured and inspected by skilled workers to meet the most exacting standards of finishing craftsmanship.

Write today (on company letterhead, please) for a free Steel Wool sample. You'll see why *Sun Ray* is the preferred Steel Wool of many leading finishing concerns.

Sun Ray Steel Wool . . . Layer Built Pads . . . Rolls . . . Reels . . . Bulk Pound Tubes—all in a variety of grades for every job!

Sun Ray

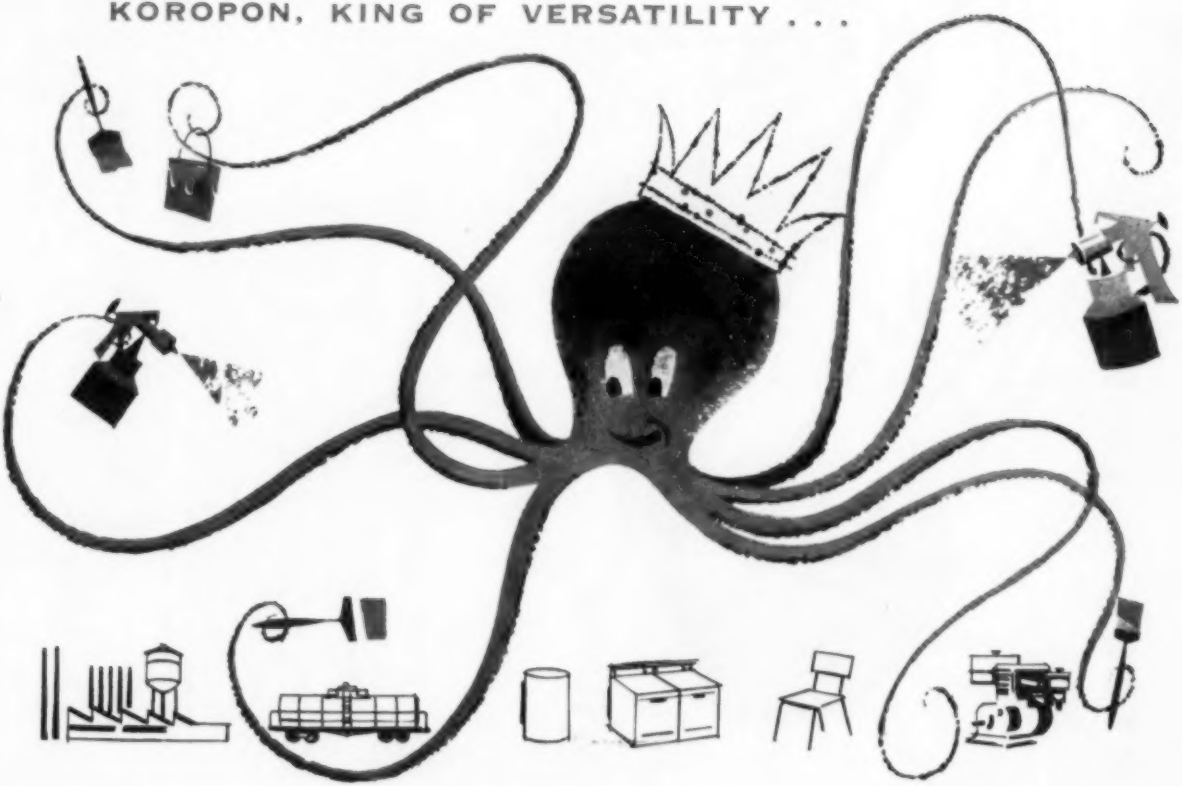
STEEL WOOL PRODUCTS

THE WILLIAMS CO.

LONDON, OHIO

MANUFACTURERS OF QUALITY STEEL WOOL FOR OVER 35 YEARS

KOROPON, KING OF VERSATILITY . . .



KOROPON—the most versatile enamel line—can be applied in any manner; engineered to cure by any method; supplied in an unlimited range of colors, glosses and clears. KOROPON enamels will withstand nearly any abuse.

KOROPON's versatility permits use on furniture, hardware, evaporative coolers, gasoline engines and interior surfaces of food containers. KOROPON enamels are used for maintenance in chemical plants and pulp mills where ordinary paints are quickly destroyed by corrosion.

UNITED was one of the first carload purchasers of epoxy resin. Our experience with epoxies is probably the longest in this country . . . when you consider epoxies, think of KOROPON and UNITED, so . . .

Let's get acquainted. Ask for one of our paint-problem experts to call on you. After viewing your operation, he can discuss a KOROPON specifically engineered for your requirements.

FIVE STRATEGICALLY LOCATED PLANTS

EAST
Benjamin Franklin Paint and Varnish Co.
Philadelphia, Pa.

SOUTHEAST
Carolina Paint & Varnish Co.
Greensboro, N.C.

CENTRAL
Illinois Paint Works *Chicago, Ill.*

WEST
Pacific Paint & Varnish Co. Berkeley, Calif.

SOUTHWEST
De Soto Paint & Varnish Co. Garland, Texas

UNITED

WALLPAPER, INC., 1350 SOUTH KOSTNER AVENUE, CHICAGO 23, ILLINOIS • ROCKWELL 2-5000

Non-Yellowing Clear Finish Used on Woven-Wood Shades

DISCOLORATION and yellowing of natural-finished wood furnishings and accessories have been eliminated by a leading manufacturer of woven-wood interior shades, floor screens, and folding doors for home and institutional use.

This achievement has been made possible by the recent development of ½-second butyrate lacquer as a protective wood finish. One of the manufacturers of wood products that uses butyrate lacquer as a standard in its regular production is the Hough Mfg. Corp., Janesville, Wisc. Hough manufactures woven-wood residential porch shades, industrial shades and other types of interior residential shades. In recent years, it has also gone into the production of floor screens and both woven-wood and fabric folding doors.

Although a substantial portion of Hough's production is finished in various colors, the majority of its woven-wood products is sold with the natural finish which is enhanced and preserved by the use of a clear protective coating.

Spraying woven wood shades with a clear lacquer by airless hot spray system.

Butyrate Wood Lacquer; Flexible, Non-Yellowing, and . . .

For many years, Hough has been utilizing standard clear lacquers as both a prime and finish coat. Eventually the company's attention was called to the merits of butyrate that would constitute an improve-

SPRAY ONE OR MANY COLORS

WITH A LOW-COST GRACO PAINT CIRCULATING SYSTEM

MANY COLORS OR FEW, a Graco air-operated Powerflo pump "direct-from-drum" circulating system can give you a "big league" paint spray system at surprisingly low cost.

In the efficient two-pumps-per-color system shown above, one Powerflo paint pump supplies the system "direct-from-drum" while the second pump keeps a standby drum thoroughly mixed and agitated for instant changeover.

These air-operated Powerflo pumps come in a broad range of capacities, for containers from 5-gal. pails to 55-gal. drums. And you feed near or far multiple spray guns uniformly and economically.

Write for the Powerflo catalog today!

SOME OF THE BENEFITS YOU WILL ENJOY:

SAVE PAINT. No loss in transfer, since you pump "direct-from-drum."

CONSTANT CONTROL. Perfectly mixed paint at uniform pressure at all times.

NO "POTS" TO CLEAN. Eliminate pressure pots, extra lines, etc.

AID HOUSEKEEPING. No spillage! It's easy to keep a "clean house."

See it in Sweet's Plant Engineering File!

GRACO

GRAY COMPANY, INC.
103 Graco Square
Minneapolis 13, Minn.

"DIRECT-FROM-DRUM" PUMPS

Factory Branches and Laboratories: New York, Philadelphia, Detroit, Chicago, Atlanta, Houston, San Francisco

Write FOR NEW **GRACO** POWERFLO CATALOG!

ment over certain finishes available in the past. The company's paint supplier had been experimenting for almost two years with a low-viscosity form of this material, designated as ½-second butyrate by its supplier, Eastman Chemical Products, Inc. Tests showed that butyrate wood lacquer produced a smooth finish with great flexibility, which resisted cold-checking and did not yellow or discolor under the influence of sunlight.

Hough Mfg. Corp. confirmed these findings with its own tests and began specifying butyrate lacquer about one year ago for its woven-wood folding doors, room dividers and floor screens, and for its interior shade line—both residential and industrial.

All of these products are made of narrow, beveled-edge basswood slats closely woven together to constitute a "wood fabric." The basswood is received directly from northern sawmills and after kiln-drying, it is sawed into splints of proper size, and sanded. The weaving of the fabric is accomplished on looms originally designed by Hough for this purpose, and finally assembled into various products.

Applied Hot, by Airless Spray; Some Dip Coating Too

Application of the lacquer represents the final step in the manufacturing process. Hough was one of the first companies in the Midwest to use a highly advertised system of hot, airless spraying which, it claims, reduced finishing time and waste in comparison to compressed air spraying. The combination of high temperature and hydraulic pressure employed by this system atomizes the lacquer as it emerges from the spray gun, causing the finely-divided lacquer particles to deposit evenly and completely over the entire surface of the wood with only one pass of the spray gun.

While most of Hough's finishing is accomplished by the airless spray technique, conventional spraying and dipping also are employed. By using varying amounts of thinners, the paint supplier's butyrate formula is sufficiently versatile that any method of applying the coating can be used. Butyrate is also used in several staining formulations which are applied by the dipping method.

Although the fire-resistant quality of butyrate coating is of little specific advantage on the products themselves, Hough executives point out that its use substantially reduces the fire hazard in the factory from the standpoints both of production and of storage.

Story and photograph supplied by Eastman Chemical Products, Inc., Subsidiary of Eastman Kodak Co. Released through Fred Wittner Advertising. Mentioned in connection with this story were Rock Paint & Chemical Co. and Bede Products Corp.

Dow Latex For Metal Coating

Dow Latex 566 will highlight an exhibit by The Dow Chemical Co. at the 1957 Paint Industries' Show, Bellevue Stratford Hotel, Philadelphia, Penna., October 30, 31 and November 1, 2.

The new product is designed specifically for the metal coatings market and is the first latex designed for industrial finishes on metal. This product will be featured in booths 1847-49.

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You'll reduce fire hazard and may lower your insurance rates because, in latex paints, water replaces flammable thinners. You'll eliminate disagreeable paint odors. You'll effect safer, more pleasant working conditions.

Don't worry about rust resulting from the water thinner. Latex paints for metal will not cause rusting. A latex paint system will fit easily into your present shop set-up without heavy investment in new equipment. Check your industrial finish supplier now.

THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Dept. 1849Z-1.

LATEX T.M.

YOU CAN DEPEND ON DOW

Dow makes paint raw materials

The Dow Chemical Company does not make paint but has been for years a major supplier of many basic raw materials used by the paint industry. In 1946, Dow introduced the first latex for the manufacture of paint and since that time has worked closely with the paint industry in developing new paint products based on a series of Dow latexes.

Water-thinnable latex paints—a growing market

Since the first successful latex paint was developed for application to interior walls, the use of latex in paints of this type has increased tremendously. In step with this rapid growth, The Dow Chemical Company and the paint industry have long conducted research on the application of latex for paints and finishes in the industrial field.

Latex metal finishes—product of intensive research

Because latex paints are water-thinnable, there were many problems to be solved before the excellent properties inherent in Dow latex could be successfully applied in the metal finishing field. But these problems were met and solved. Then followed extensive tests in the laboratory and field. Now the results are in . . . water-thinned latex finishes for metal are a reality.

Latex basic to many metal finish applications

The primary research on latex finishes done by Dow and carried into complete paint formulations by metal finish manufacturers, can now be applied to specific product requirements of the industrial finish user. Since each consumer of industrial finishes will have very specific requirements, it now remains for the paint supplier to provide specific formulations based on latex for each application. Dow suggests that you work closely with your industrial finish supplier in developing finishes to your specifications based on this important new raw material, Dow latex.

THE DOW CHEMICAL COMPANY
Midland, Michigan

Coating Interior of Long Steel Pipe

UTILIZATION of plastic coated drill pipe and well tubing has had a strong up-surge in the oil industry the past year. Increased demand is attributed to a more general acceptance of the fact that careful selection of and specifications for plastic coated tubular products are as important as for other equipment and materials used in drilling and production.

Reliable reports of experience now show that drill strings with the best plastic coatings have lasted two to three times as long as uncoated pipe under corrosive conditions while adding only 10% to 15% to their first cost. The economic advantage of plastic coated well tubing has been much more obvious because of the immediate elimination of one-half to three-fourths of costly maintenance that is required to remove paraffin accumulations.

The National Supply Co. pioneered in the production of plastic coated drill pipe by starting factory production on a small scale ten years ago in its Spang-Chalfant plant to solve the more serious corrosion problems that are encountered in a number of oil fields. Selection of a plastic, durable enough for all conditions of service, and of the methods of application and surface preparation which assure a tight bond even when the pipe is strained in tension and torsion, or is subjected to corrosive materials at the highest temperatures encountered in deep wells, followed an exhaustive series of tests in the Spang-Chalfant research laboratory.

Spang tubular products, now coated internally with a baked-on epoxy-phenolic plastic, are reported to be the only ones today that are factory-applied. Some of the field-applied plastics of various types, which were

offered later, have also given economic advantages, particularly when applied in oil well tubing where immediate benefits may be derived from reduced maintenance.

Since extended life is the only important basic advantage of plastic coatings in drill pipe, only a high quality plastic coating can be justified. As a result the present trend is toward a demand for grades of coated tubular products that have demonstrated longer life, more resistance to accumulation of paraffin, or both.

A comparison of baked-on and air-dried types of coated tubing in tests conducted by one of the leading oil producers has resulted in specifications limiting coated tubing to baked-on coating.

This story was supplied by Ketchum, Mac Leod & Grove, Inc., for The National Supply Co., Pittsburgh, Pa.

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Otto J. Mileti Joins Napko

Otto J. Mileti, Jr. has joined the Napko Corp. as technical director of that paint and varnish firm. A native of Louisville, Ky., Mr. Mileti formerly was laboratory supervisor for a paint, lacquer and varnish firm in that city.

He has been active in the paint industry for 11 years and is a former vice-president of the Louisville Paint & Varnish Production Club.

Napko Corp. recently built an ultra-modern, new plant at 5300 Sunrise in Houston, Texas.

Oakite Booth at Metal Show

New materials for phosphating, barrel finishing, rust and scale removal, and paint stripping will be featured at Booth 247 at the Metal Show in Chicago, Nov. 4-8 by Oakite Products, Inc., New York.

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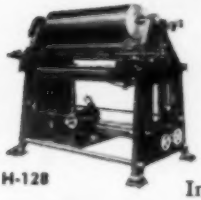

H-128

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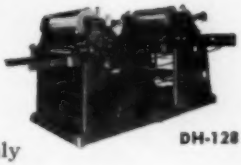

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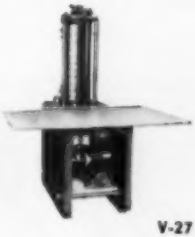

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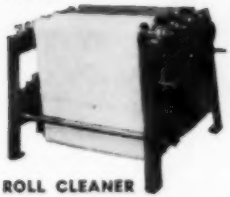

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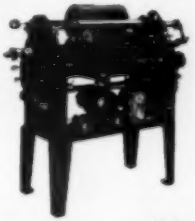

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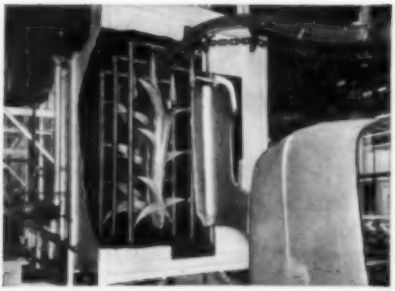
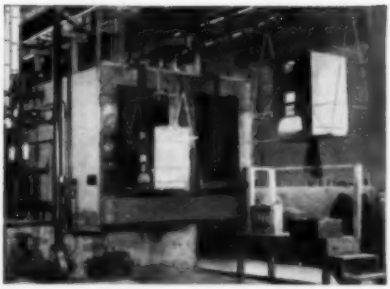
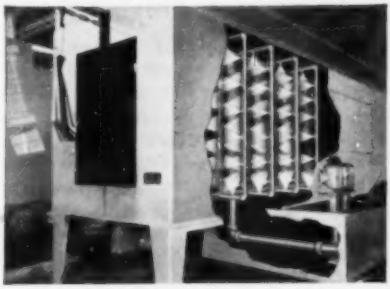


Flo-Coaters



Multi-Stage Metal-Treating Units

Dip-Coaters



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Now, through its new subsidiary—the Newcomb-Detroit Company — DeVilbiss emerges as the only "one-source" company that designs, manufactures and installs complete systems for all major types of finishing operations.

For large, diversified finishing departments, this means matched equipment for fully integrated systems, with performance guarantee a "one-source" responsibility.

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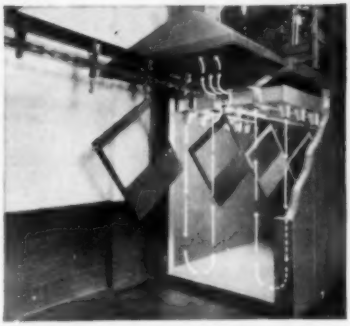
So, when planning to build, revamp, or supplement your finishing department, call DeVilbiss—the one-source supplier of all major finishing equipment.



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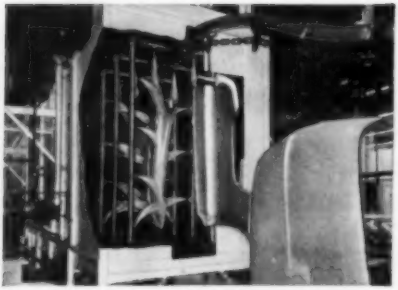
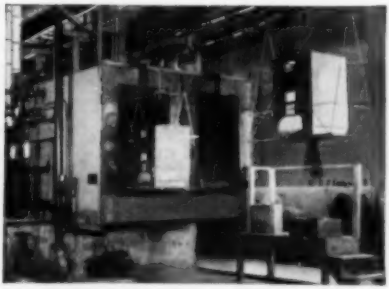
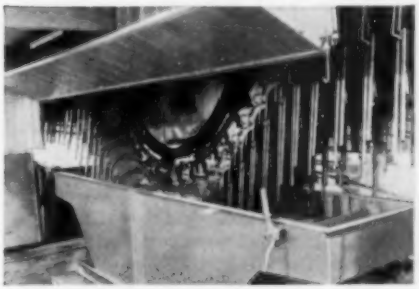


Flo-Coaters



Multi-Stage Metal-Treating Units



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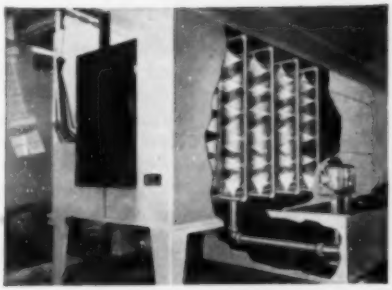

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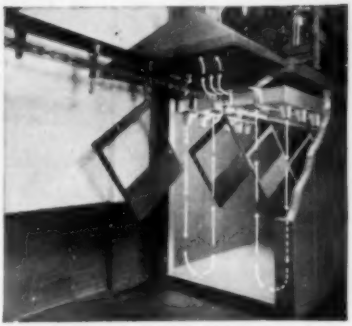
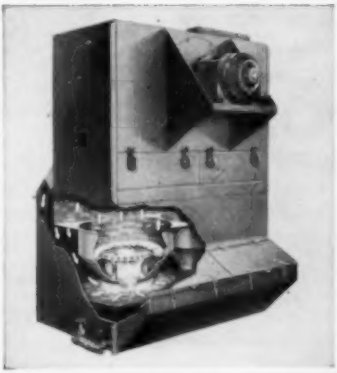


Industrial Ovens



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Lacquer Blushing

THE QUESTION of lacquer blushing has been viewed and reviewed countless numbers of times. Many people feel that blushing is a simple problem which takes very little trouble to eliminate. That is probably true in many cases. However, blushing as a problem has not completely disappeared from the finishing scene Many complaints are still registered with lacquer manufacturers regarding blushing. The simple act of adding retarders or slowly evaporating solvents is not always the answer.

Blushing occurs where the rapid evaporation of solvent produces moisture condensation and "throw out" or precipitation of the nitrocellulose as a white haze. But let's delve a little more technically into the blushing mechanism, particularly into the more misunderstood meteorological phases under which blushing occurs.

The meaning of such terms, as humidity, relative humidity, dew point, etc., if understood, could clear up some of the mystery that surrounds blushing.

Humidity is the amount of water carried by one pound of dry air. Percentage of relative humidity is the ratio of the quantity of water actually present to the quantity which would completely saturate the air at that temperature. The dew point is the temperature at which condensation of water in the air would take place.

Let's take a normal example. At a temperature

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of 80° F., and relative humidity of 50% there would be 76 grains of water present per pound of dry air. The dew point would be 59° F., which means that at this temperature (59° F.) the 76 grains of water would start to condense. By raising the room temperature from 80° to 90° and keeping the same 76 grains of water, the relative humidity will drop to about 38%, but the dew point will remain the same. However, if we had raised the temperature from 80° to 90°, and the relative humidity was the same at both temperatures, that is 50% at either 80° or 90°, we would now find that at 90° we had 108 grains of water in the atmosphere per pound of dry air and the dew point would be 69°. Thus if the rapid solvent evaporation in a lacquer could reduce the local temperature 21° (from 90° F. to 69° F.) blushing would result.

From all of this, which for many readers must be a complicated jumble of figures, we conclude that air, during the high temperatures of the summer season, even at the lower percentages of relative humidity, still contains increased quantities of water vapor. We therefore find that contrary to a more popular notion, the temperature and relative humidity are inversely related when it comes to lacquer blushing. Government specification MIL-F-18264 (aero) contains permissible atmospheric conditions for spraying lacquer with no added retarder.

Temperature °F.	% R.H. (max.)
95°	54%
90°	56%
85°	59%
80°	63%
75°	68%
70°	74%
65°	80%
60°	85%

It is hoped that we have contributed a little more understanding to the blushing question, at least to the point where you understand that on many occasions the atmospheric conditions may be such that even the best of retarders will not alleviate the condition. In these instances, supplementary equipment must be utilized, which can either 1) raise the temperature and keep the water content steady, or 2) lower the water content and keep the temperature steady. Possibly when these conditions are fully understood, the simple act of adding retarders will remove this basic elementary problem.—*N. I. Gaynes.*

E. E. Stalo; Klem Chemicals

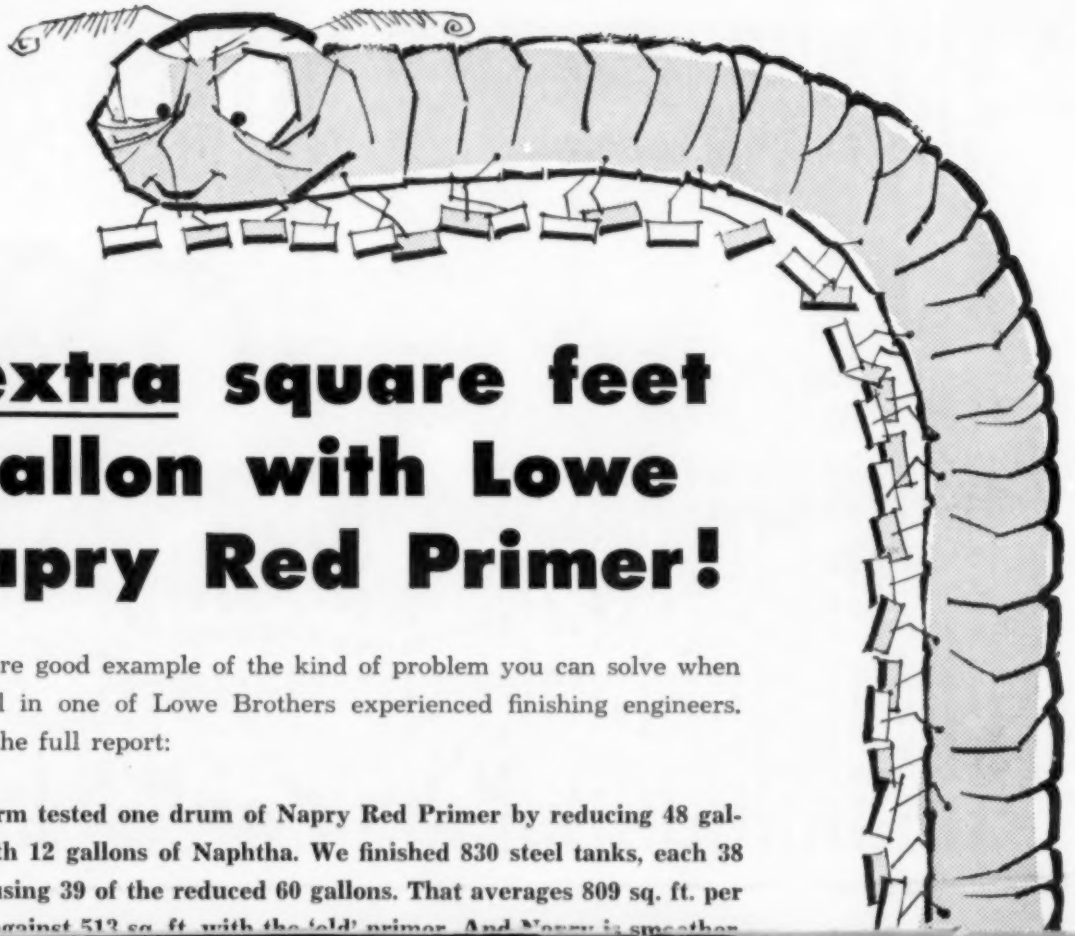
Mr. T. Curtis McKenzie, president of Klem Chemicals, Inc., of Dearborn, Mich., manufacturers of chemicals for metal surface prefinish cleaning, has announced the appointment of Mr. Edwin E. Stalo as Indiana representative. Mr. Stalo, who will contact industrial plants in Indiana, has had many years experience in the metal cleaning field.

Gail A. Smith New Wyandotte Minneapolis Dist. Sales Mgr.

Gail A. Smith, known throughout the country as author and "trouble-shooter," became Wyandotte Chemicals, J. B. Ford Division, Minneapolis District Sales Manager Oct. 1.

Carl Dover, who has been Wyandotte Chemicals, J. B. Ford Division, Minneapolis Manager since 1950, requested early retirement because of ill health.

Mr. Smith has both a practical and academic chemical background. He has spent seven years in industry and has recently done field research and "trouble-shooting," for Wyandotte Chemicals, J. B. Ford Division, in most sections of North America.



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Problems—Finishing and Personnel Too

IN ADDITION TO having technical "know how" and being familiar with production techniques, the service representative in industrial finishes must often act as mediator, arbitrator and general councilor to the customer.

A recent incident in a plant manufacturing, on a subcontract basis, semi-secret missile parts, is a perfect illustration. The technical representative was greeted with open arms and informed that Government inspectors had halted all production because of "orange peel" on the finish. After numerous conferences with all levels of management and Governmental inspection, where the problem was outlined, he was finally conducted to the production floor to get a first hand view of the difficulty.

At this area he was met by the general foreman who declared: "Everything was all right until we switched from X company's lacquer to yours. I don't know why they switched from a good material to your cheap junk." This was designed to make the service man feel highly complimented.

Missile parts that had been spray painted were of such design that spraying the sides caused overspray on the top; and spraying the top caused overspray on the sides. This condition had caused the original complaint of so called "orange peel." When the lacquer was sprayed over a flat inspection panel it showed some "cratering"

and some orange peel. In order to overcome these defiiencies it was necessary to lower the air pressure from an extremely high 70-lbs. per square inch to 50-lbs., and slow the speed of the operator's motion. Also, some slow solvent and silicone additive were added to the lacquer to improve its flow characteristics.

The general foreman was jealous of the spray supervisor, a new and competent employee of many years experience. This spray supervisor had been hired at the insistance of one of the company vice presidents who believed that the general foreman lacked a reasonable knowledge of modern finishing. Accordingly, the general foreman then attempted to discredit the new spray supervisor by pointing out the overspray situation to the Government inspector on the floor. Unfortunately the whole affair had mushroomed beyond all proportions to the highest echelons of inspection and management.

Of course, some technical defects were in evidence in this case. The spray technique was not of the best. The lacquer itself had to be adjusted for better flowout and the elimination of cratering. However these problems could have been quickly resolved . . . . but here the trouble shooter was faced not only with mechanical and chemical problems, but intra-plant friction, jealousy and departmental politics. In addition it was necessary to permit the Government inspectors to retreat slightly in their position without losing face and at the same time convince the company officials that nothing really bad had occurred with the lacquer.—*Jim Jam.*

Roller Conveyor Systems

A new 4-page brochure illustrates and describes A-F Engineered Gravity Roller Conveying Systems. It will be sent on receipt of letterhead request or publication inquiry. The Alvey-Ferguson Co., 2037 Disney St., Cincinnati 9, Ohio.

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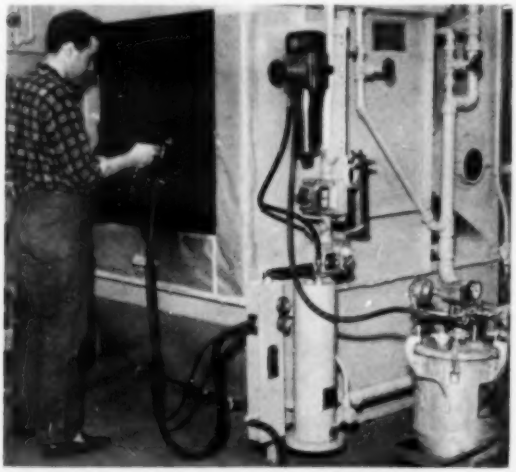
Qualifications of a Good Foreman

THE QUALIFICATIONS necessary to be a good foreman for any branch of work are many and varied. Perhaps most foremen will be surprised if they try to analyze their duties and problems, some of which are not fully appreciated by management or the employees.

A foreman of any department has a definite duty to perform. On his shoulders rests the responsibility of turning out a quality product—sometimes with inferior materials, equipment or manpower—at a reasonable labor cost. If the quality of workmanship is not up to standard, or if the costs of producing are too high, it is the foreman who gets the blame. To maintain quality and costs at a level satisfactory to management is his problem. Even though the real fault may be due to circumstances beyond the foreman's control, nevertheless he must take some or all of the blame.

He must be familiar with the know-how of every operation in his department. He must know and be able (in some cases) to perform every duty in his orbit of control — not necessarily as fast as a regular experienced operator but with just as good or better quality results. When quality is at fault the foreman has to be able to put his finger on the trouble immediately, sometimes reaching far back through the years of his own experience to locate and correct such conditions.

Having the know-how is not



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This THERM-O-SPRAY Heater is now installed at Western Electric Company, Springfield Gardens, L. I., N. Y., together with six *new* THERM-O-SPRAY units.

There is no pump . . . nothing to wear out. There is no gasket or packing to leak.

Heat transfer is synchronized with spraying. When spraying stops, heating stops. Paint is not circulated; is heated only as used. Result: No overheating of paint . . . no clogging.

During spray interruptions hot air circulation by pressure in a jacketed hose keeps the paint hot up to the gun.

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enough however. He must be able to impart his knowledge in many different ways to those who work with him and for him. Knowledge is nothing unless it is freely given where needed and in a manner suited to each individual. Changes in methods or materials calls for tactful explanation to employees. To keep the people working with him and for him in a constant effort to get greater production is something that can well take all of a foreman's skill, patience and fortitude. If a foreman can manage to convey the thought that he is trying to make his employee's work and procedures easier, then at least one phase of his problems will be reduced.

In addition, he should have a general knowledge of all other departments in the plant where he works. Methods of storing and stacking material, of moving material from one department to another, and the general picture of assembly and manufacture — this information is always helpful and sometimes definitely necessary.

The foreman's attitude at all times must be calm and serene. He must try to gain and retain the confidence of his workers to the extent that they will believe in him and his actions. Management decisions must be carried out, regardless of personal beliefs; and to enforce these regulations and still maintain the trust of his employees is often a problem in itself.

A foreman must try and be fair in all of his decisions. He should treat everyone as he himself would like to be treated; he should try to help those in-

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WEST DES MOINES, IOWA

dividuals who have personal problems, for sometimes these problems may affect not only the person involved but may affect the attitude and production of the entire department as well.

Finally, when you consider all of the features of a normal foreman—the ability needed, the finesse necessary, the patience required, the type of man who can hold the trust and confidence of both labor and management—there you have a man with innumerable headaches who receives little credit except the personal satisfaction of a job being well done.—*Al. Kling.*

Screen Process Show at Detroit

Featuring the largest trade exhibit in its history, the 1957 SPPA Convention and Show will take place October 26-28 at the Sheraton-Cadillac Hotel, Detroit, Michigan.

More than 3000 members of the screen process printing industry, including printers, suppliers and manufacturers, are expected to attend the convention.

The trade exhibit is a high point of any SPPA Convention. The 1957 Exhibit has been sold out since July and promises to be not only the largest, but the most complete and up-to-date show yet featured at the SPPA meeting. The Convention program allows registrants plenty of time for visiting the exhibits.

Materials For Modern Coatings

"Materials for Modern Surface Coatings" will be the theme of the Hercules Powder Co.'s exhibit at the annual Paint Industries Show in Philadelphia, October 30, 31, November 1, and 2.

Various exhibit panels in Booths 1835-1836 will depict and list the wide variety of products available from Hercules for surface coatings. The list includes pentaerythritol, "Parlon" (chlorinated rubber), nitrocellulose, ethyl cellulose, cellulose acetate, synthetic resins, rosins and modified rosins, and tall oil fatty acids.

One panel will depict the advantages of using Parlon in short-oil alkyds while another will show how Hercules' PE imparts greater resistance to heat, light, and moisture.

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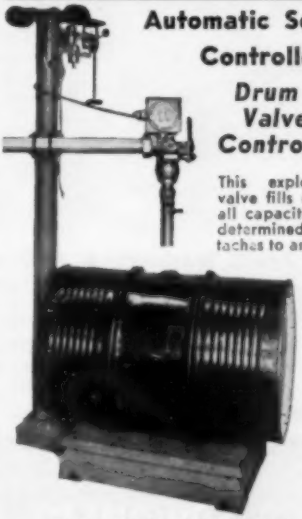

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Further details and prices on request.

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Too Heavy; Too Light; What Do They Mean?

IN PREVIOUS ARTICLES I have discussed the disparity in meaning attributed by many people to some of the oft used terms in industrial finishing.

Recently I became aware of two more terms which receive varying interpretations, with the usual resulting confusion. A furniture manufacturing concern was applying a coating system by the hot spray method. As is the practice with many large users of industrial finishes, this firm bought materials from more than one source of supply. It was essential that each vendor furnish material of similar physical and chemical properties so that exact uniformity could be maintained in all finishing applications.

It developed that material from one of the suppliers was not producing results equal to that produced by materials from the other lacquer suppliers. The salesman for the delinquent vendor was told that his material was *too light* and should be made *heavier*. At this point many readers would make the same assumption that this technical representative and his company made. Accordingly they raised the viscosity of the material. Unfortunately this was not what the user desired or intended. The furniture manufacturer's buyer was actually referring to the *total solids of the lacquer* rather than to its viscosity. Raising the viscosity actually increased the spraying trouble.

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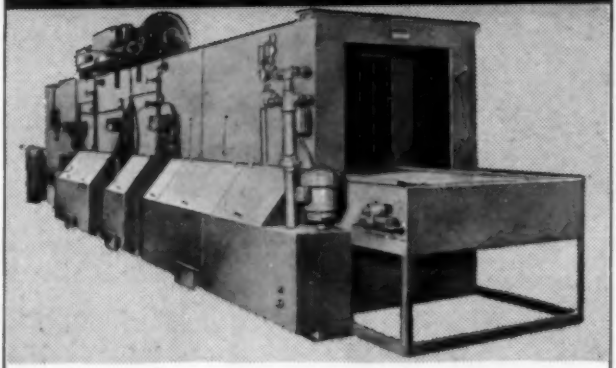

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If you have an application for cleaning, phosphatizing or pickling of steel surfaces, Dry-off ovens, Dip-coating, Flow-coating, Bake-ovens, individual units or complete systems, it will pay you to discuss methods, operating costs, maintenance costs, equipment requirements and layouts with CIRCO Engineers.

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Clark (Rahway), New Jersey

In order to fully understand the particular problem involved here, one must compare some of the differences between hot and cold lacquer application, particularly in relation to the results required. For many years it was the practice among users of cold spray lacquers, to buy heavy consistency in lacquers and then thin them as much as 200% with relatively inexpensive thinners. The fact that these thinners were just wasted by evaporation did not alter the feeling that the buyer was getting two gallons of lacquer for the price of one. Getting something for nothing is a great American avocation. Thus in that case, "light" and "heavy" meant changes in viscosity.

The advent of the hot spray method changed much of the basic concept in finishing where this innovation has been adopted. The question is now *how many mils of lacquer film can be deposited per unit of time.* This is strictly a function of the solids that are left in the film after the solvents have evaporated. High heat rather than thin thinners is used now to lower the viscosity of many finishing materials. Of course, incorrect solvent balances and improper viscosity will still cause many application difficulties.

But now users of hot lacquers are more solids conscious. While it is unusual to find "light" and "heavy" referring to viscosity, it is not without probability, as in the situation under discussion, that these same terms will be used more in referring to *solids content* and *film deposited*

It is extremely important that complete clarity of terms exist, if problems and misunderstandings are to be avoided. The terms, "light" and "heavy" may find ever increasing use. One would do well to make sure about which relationship the reference is made—whether it refers to solids or viscosity.—*M. M.*

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LETTERS from READERS

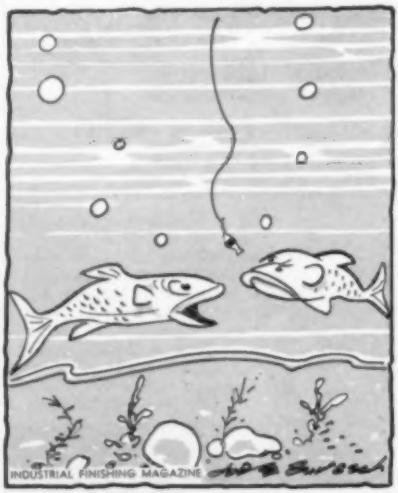
Decals Wanted

Where can we purchase either decals or stencils in Pennsylvania Dutch Design?—*R. F. S.*

In a letter we are naming several manufacturers of decals.—*Editor.*

We've Been Doing It 7 Years

The article on page 34 of the September issue, entitled, "Protective Finishing of Steel Shelving," indicates that Penco Metal Products is the first manufacturer to use this process. We have been using this system on our standard products of steel shelving, lockers, etc., for over 7 years.—*E. P. Tucker, Pres., Estey Metal Products, Inc.*



"That isn't a very tempting lure. Some finishing company failed to apply a top coat of water-resistant clear lacquer."

Flexible Adhesive for Leather

We want a flexible adhesive to use on leather for flocks. We have had considerable difficulty with the adhesives we are now using; they either crack badly or do not hold up well. We are interested in obtaining any adhesive that will work out satisfactorily in our factory.—*J. R. C. (Denver, Colorado).*

Several suppliers of adhesives are named and their addresses given in a letter we are sending you.—*Editor.*

Hose for Hot Paint

We are interested in purchasing in America, rubber tubes for synthetic and N.C. warm paint, F. 158°. We ask you to send us the address of a firm which makes such rubber tubes. —*Elettrotermica Adamoli, Sesto S. Giovanni, Via Masaniello 58, Milan, Italy.*

We Have Polyurethanes

We would like to get the name and address of the company which inquired about Polyurethane on page

Perlite... Air Dry

Conversion Finish for Furniture...

NO ovens needed....NO force drying necessary.... yet you get the advantages of a force-dry finish with PERLITE. Excellent for use on furniture, especially blond or light colored woods—pink suites, tones, limes, grays, etc. Also for novelty furniture, utility tables, kitchen cabinets, bedroom furniture and other case goods.

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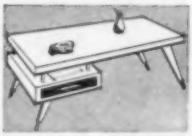
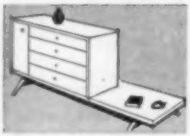




If you *manufacture* any of the above (or any other furniture) we invite your inquiry.

PERFECTION
PAINT AND COLOR COMPANY
INDIANAPOLIS 2, INDIANA

76 of August issue. We have been licensed to produce Polyurethane coatings.—*The Stanley Chemical Co.*

Information supplied.—*Editor.*

"Well, well, you blew in early tonight. Have trouble at the plant?"

We Have Tumbling Enamels

Referring to August 1957 issue on page 78, V.S. is asking for suppliers of tumbling enamels. We would like to contact V.S. as we manufacture a complete line of tumbling enamels used for wood turnings.—*The C. E. Bradley Laboratories, Inc.*

Effective Sealer for Pine

We have just come across a back issue of this publication and we are quite interested in a letter from one of your readers. This letter indicates that the Newport News Shipbuilding & Dry Dock Co. is looking for a sealer for Idaho white pine—a sealer which will prevent any acid bleed of the wood from coming up through the finish.

Waterlox Aluminum Paint has performed this function satisfactorily for years and we would like to contact the Newport News organization. We will be glad to furnish the names of companies that have successfully used this product for the purpose indicated.—*Waterlox Division of the Empire Varnish Co.*

In a letter we are giving you the individual and address from which this inquiry came.—*Editor.*

Offers Dirty Lacquer Thinner

We have a lot of dirty lacquer thinner which is used for cleaning our spray equipment, racks, etc. Are there some companies willing to buy this material or clean it for us? Would you please put our request in the Letters from Readers Department?—*Falcon Rule Co., Auburn, Me.*

One name that comes to mind is Solvents Recovery Service, Inc., 1025 Broad St., Newark, 2, N. J.—*Editor.*

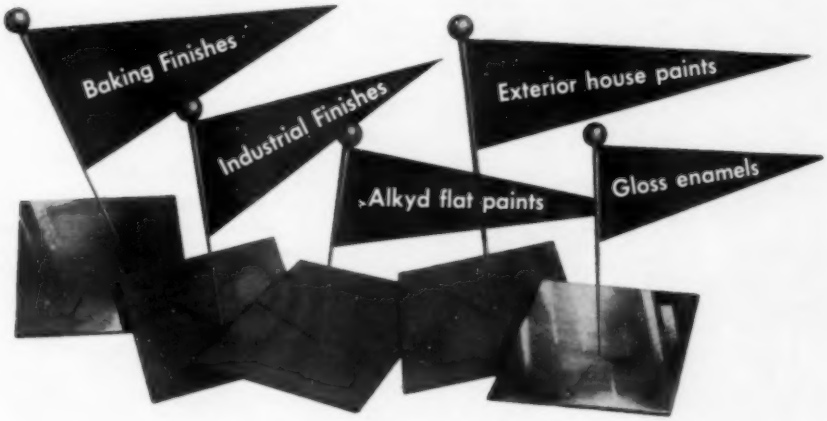
Glossy Enamel on Dowels

Please give me information on the quickest and most economical method to use in painting wood dowels ⅝-in. round and 22-in. long. They must have a glossy finish in non-toxic lacquer or enamel. I use five different colored dowels.—*S. F. D.*

We suggest that you look into the merits and possibilities of the Gasket Squeegee Method, which is described and illustrated in a feature article published in this magazine for June

see the proof!

Oronite* ISOPHTHALIC improves coatings—at lower resin costs!



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*T.M. 4352

1956, pages 88-100. Additional information about the equipment can be obtained from Oglesby Machine Co., 704 Craighead St., Nashville, Tenn. —*Editor.*

"That masking tape applied to Windy certainly upped production around here."

Metal Patch Filler

We would like to get the name of the company making the inquiry on Metal Patch Filler, as published in Sept. issue, pages 88 and 90. We manufacture a non-shrinking metal filler which we feel sure will meet his needs completely.—*The Arco Co.*

(Same as above).—*Standard-Toch Chemicals, Inc.*

Who Sells Lacquer Sticks?

In June issue, page 88, we notice an article giving the experience of Ken McKenzie on painting sunken letters with a lacquer stick. We are interested in getting the names and addresses of manufacturers of lacquer sticks so that we may contact them regarding the painting of letters in an operation that we have here.—*M. Tool Co.*

In a letter we are giving you names and addresses of three concerns in your locality who, we believe, can supply what you want.—*Editor.*

Veiling Lacquer

In one of the articles in *Industrial Finishing* you explained the process of using veiling lacquers. I wonder if I might be able to get a copy of that article?

I hope I am using the proper term in calling this "veiling lacquer." It is the process of putting on a thin line of lacquer, not to be confused with the multi-colors.—*S. J. B. Co.*

One of several articles published on this subject appeared in Dec. 1955 issue, copy of which is being sent to you.—*Editor.*

To Protect Chrome Bumpers

Could you recommend some lacquer or some other coating that could be used to cover chrome-plated bumpers, to protect them from salts used on the roads during the winter? Possibly something that could be stripped off in the spring?—*W. E. F.*

There are various clear coatings that can be used and are being used for this purpose. In a letter we are naming several concerns who can probably supply what you want.—*Ed.*

Why Product Painting Is So Necessary Now

ONE OF THE most important steps in the manufacturing process of almost all products today is that of applying an attractive looking finish. On simple one-piece articles, the painting or finishing is often done just before packaging for shipment; but where a more complex assembly is involved, coating of one type or another may be applied to component parts at various stages during manufacture.

A common example is the application of a primer coat to raw castings before they are machined, making it easier for the machinist since then he will not be plagued with the presence of raw cast-iron dust. Naturally, prime coating castings will also prevent their surfaces from rusting while they are stored or while they are passing through various machining operations. Fabricated parts, stampings and machined parts are often given a protective coating before final assembly in order to prevent rusting from within after they are assembled and in operation.

There are at least three good reasons for painting products. The first is appearance. The favorable appearance of a item is an important factor in our competitive economy. As proof of this, walk into any store—a grocery, hardware or department store—and you will always find an array of colorful products.

Just about every time you buy something, when

ONLY SICON "takes" the 550°F. temperature reached in sections of this Preway heater grille.

ONLY SICON protects this "Direction Flo-Grille" where temperatures often reach above 500°F.

EVEN A HOT 550° F. can't faze the finish when it's

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HEAT RESISTANT FINISH

The upper grille of the famous PREWAY heater often reaches a surface temperature of 550°F. Here, the use of an organic finish was found to require raising grille to protect lower part. But in tests SICON protected so well that re-design proved unnecessary. SICON in smart decorative colors can protect your product too—and save money besides! Write for proof.

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MIDLAND Industrial Finishes Co

DEPT. J-18, WAUKEGAN, ILLINOIS

ENAMELS SYNTHETICS LACQUERS VARNISHES

you have a choice from a selection of articles which are very nearly the same, consciously or unconsciously, you will choose the article that has the most pleasing appearance. This simply illustrates the point that a cheaply made product with a good finish will often outsell a well-made product that has a poor finish, at the same price. Every manufacturer is or should be well aware of the importance of giving his product the best finish that its selling price will allow.

Protection is the second reason for painting parts and products which are to be exposed to the weather—to prevent rust. This is as important as painting for appearance. A coating applied for protection must cover even the most inaccessible surfaces because moisture and dampness will find every exposed surface.

The third, and perhaps least obvious reason for painting parts is for their identification. We find that painting for identification is becoming more and more widely used throughout industry today because of the increased complexity of many products and the specialization of today's labor forces. In many of the largest electronic assembly plants women or inexperienced young men now put together many complicated subassemblies.

Experience has shown that it is much easier to instruct a worker to put a red screw in the hole at the right and a green screw in the hole at the left than to teach them to put a 10/32-in. screw in one place and a 10/24-in. screw

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in the other place. Color is also employed where various sizes of springs are used in order to tell them apart. Color coding of this type has enabled manufacturers to make good use of less experienced help, and has appreciably cut the time necessary to perform a great many assembly operations.

Realizing the importance of using a colored finish has caused many manufacturers to carefully investigate ways and means of applying a finish by the most economical means. There are several methods used by industry today—spraying, flow coating, dipping, tumbling and centrifugal painting. Actually, each of these has its own particular class of applications, where it can do the best job . . . . *From "Barrett Service Bulletin", Leon J. Barrett Co., Worcester, Mass.*

Industrial Adhesives Department Announced by Permacel

The formation of an Industrial Adhesives Department by Permacel Tape Corp., New Brunswick, N. J., will permit Permacel to expand in the important industrial adhesive market.

The Industrial Adhesives Department will market both Permacel and LePage's products. The LePage's line includes bulk liquid fish glue, white glue, contact cement, padding compounds and various synthetic adhesives.

MacDermid Inc. Sales Engineer

MacDermid Inc., Waterbury, Connecticut manufacturer of metal cleaning, plating and finishing chemicals, recently announced the appointment of Fred Johnson as Sales Engineer. He has been assigned to assist Cecil Thornton covering the New York State area from Rochester, New York.

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QUESTIONS and ANSWERS

Chair Seats; Backs

Could your Service Department assist us with advice on the following point, or suggest where we may get advice?

We are manufacturing, in bulk, chairs for schools—tubular steel frames, curved plywood back and seat. At present we spray these with French polish, cutting down with fine sandpaper between coats. We would like to use a less costly method involving less handling. Is there available a dipping lacquer which would give a clean, durable finish with one or at most, two dips?—*F. & W. Ltd., Hastings, New Zealand.*

Let me refer you to an article starting on page 18 of January 1955 issue of this magazine. I wrote this article at the American Seating Co., Grand Rapids, Mich. You will note that they dip chairs in the primer and apply the top coat by electrostatic airless spray—both excellent methods of paint application.

Much depends upon your finish requirements. As to your question about dipping lacquers, yes, most of the suppliers who advertise in this magazine make and sell dipping lacquers, clear and pigmented synthetics and varnishes. The dip coating method of application has improved considerably in the last few years here in the States. The two main improvements are in the solvent vapor drain tunnel which is attached to the exit end of the dip tank (a conveyorized dip tank) and in which the dipped pieces drain quickly (limit about ten minutes) and efficiently with very high salvage of coating material drained off the product. The other is a vertical dip with a controlled withdrawal speed of dipped products.

It may be possible for you to dip the chairs with one or possibly two coats—or one dip coat with a supplemental spray along the upper surfaces to equalize the film thickness. One thing to remember about dip coating is that viscosity of the material is a most important factor. You might take the matter up with your supplier, giving him full information as to your requirements in a finish, and then experiment with one or more methods of dipping the chairs. With modern equipment, improved methods and proper control of materials, I would think that it is entirely possible to dip finish school chairs.—*P. C. Bardin, Associate Ed.*

Sap Staining Walnut

We manufacture modern furniture and, in the past, have used mostly hardwood plywood for our product. However, due to a number of style changes, we have started to use a larger percentage of hardwood lumber, particularly walnut.

The solid parts that we manufacture are made from No. 1 common walnut lumber. Unfortunately we have a number of parts with sap wood which is much lighter in color than it should be. We feel that it would be prohibitively expensive to purchase walnut lumber free from sap, which is the way our finishing

department would like to see the parts produced.

It should be possible to stain those parts of the lumber which are too light—staining them prior to any other finishing operation. We are wondering whether you can recommend a type of stain of sufficient penetrating power and fastness to light which would take care of our problem?

Inasmuch as some of the components are only partly of light sap wood, we are also interested to find out which way the staining operation could best be performed.

Unfortunately our spraying department is already hard pressed to produce its quota and, if at all possible, we would like to use a stain that could be either brushed on or wiped on, whichever is better. We would then train one man specifically to take care of this operation. We believe this would be more economical than insisting on all parts being free of sap, which we feel would be almost an impossibility.—*G. B. (Furniture).*

If you are finishing your walnut in a transparent stained finish the best sap or "bring-up" stain to use would be a high grade aniline water-soluble dye of the proper color. This should be dissolved first in hot water; then, after cooling, mix with alcohol in the proportion of one part of alcohol to one part of water-stain solution. This alcohol will allow the stain to dry faster, and also it will help to prevent grain raising.

A much neater job of staining sap wood can be done with a 1-in. or 2-in. Fitch brush than can be done by applying the stain by spray. However, it does require much less labor to apply the stain with a small spray gun. A satisfactory job, quality wise, can be done this way. The sap stain should be allowed to dry for 30 minutes, then scuff sanded with No. 8/0 abrasive paper; then proceed with the regular finishing operations.

Where sap stain is to be coated over with one or more coats of semi-transparent lacquer pigmented toners, there is a new alcohol soluble non-bleeding aniline dye now available at all finishing material suppliers. This dye can be dissolved in alcohol; then a small amount of one of the hydro carbons, such as toluol, can be added to help prevent grain raising. Some finishers prefer to add a small amount of Glycol also. This will help to prevent grain raising. Any reputable finishing material house will supply the above stain of the proper color ready mixed where desired.—*H.W.C.*

Glazing Dries Too Fast

I have trouble with my glazing oil; it dries too fast to get a good glazing job. I mix with colors in oil. I make up one gallon of ½-pint linseed oil, ½ drier, into a gallon can, balance mineral spirits—and I spray water white lacquer over glaze when dry.

Can you suggest something better to use that will not dry out so fast . . . . and give me more time to glaze, as I do a lot of glazing on bone-white furniture?—*A. J. W.*

Evidently the solvent you are using in your glaze is too fast. I would suggest that if the amount of glaze stain you use justifies it, that you have some reputable finishing supply house formulate and furnish you a glaze stain that will meet your needs for drying, ease of wiping, brushing, etc. However, if you use glaze in very small quantities then I would suggest that you buy the liquid base for your glaze from a finishing material house already mixed. You can then add the color to it. This seems to me the simplest solution to your problem. [*Continued on page 130*]

Or, if for some reason you must continue to make up your own glaze, then I suggest that you have your supplier of finishing materials work out a formula for a glaze that will meet your needs. You can then buy the raw materials for the glaze and mix them on the job as you use them.

It seems to me that it would be impossible for anyone to suggest an exact formula for mixing a glaze stain unless that person were in the plant and could familiarize himself with the conditions of the plant, such as humidity, heat, etc.—*H. W. C.*

Lacquer Information Center at Paint Industries Show

For the sixth successive year a Lacquer Information Center will be a feature of the annual Paint Industries Show, which is being held in Philadelphia, October 30, 31, November 1, and 2.

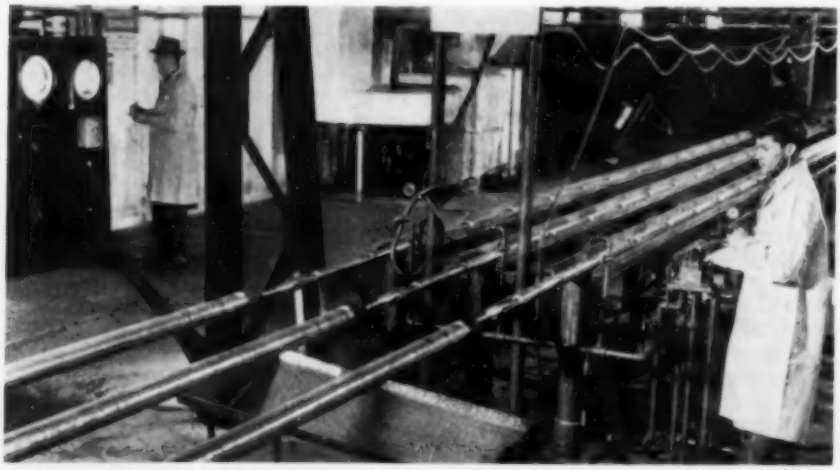
Once again the exhibit is being presented through the cooperative effort of suppliers of basic raw materials for lacquer. The exhibit will depict the latest developments in lacquer technology, formulations, and application. Ten companies are cosponsors of this year's Lacquer Information Center.

The exhibit, through the combined technical knowledge of the sponsors, will be the headquarters for the latest information on lacquer in its wide variety of applications.

Aerosol Guide Book, $8.00

A 96-page guide book for manufacturers and marketers of aerosol products has been prepared by the Chemical Specialties Manufacturers' Association to consolidate all of the testing methods, regulations, and recommended practices developed over the last ten years by the pressurized packaging industry. It is available in loose leaf binder form to facilitate additions and corrections.

Representing nearly a year's work in reviewing, editing, and updating published material, the C.S.M.A. Aerosol Guide is available at $8 per copy, plus postage, from the Chemical Specialties Manufacturers' Association, Inc., 50 E. 41st St., New York 17, N. Y.



Factory application of an epoxy-phenolic plastic in drill pipe and well tubing is a carefully controlled procedure by the Spang-Chalfant Division of National Supply Co. Three 35-ft. lances with 360° spray heads coat internal surfaces of preheated pipe after blast cleaning with chilled iron shot. Recorder-Controllers (upper left) assure proper drying temperatures and time in the ovens after each layer of plastic is applied. (See story on page 103).

Roller Coating Four Sides in Two Passes

ONE PHASE of roller coating practice is to coat the edges of relatively narrow flat strips, so that four sides of the strips can be roller-coated in two passes through the machine. They are run through first edgewise, then flatwise. A reasonable length of time is allowed to elapse between coatings so the paint or lacquer on the edges will dry to touch before the pieces are run through the machine flatwise. Although it may sound fantastic and impractical, one concern is edge coating several narrow pieces at a time by the simple expedient of *running them through the roller coater while they are tightly tied together in bundles.*

One plant where this method is followed with apparent success, is Scholz Homes, Inc., Eastern Division, Wilmington, Delaware. This manufacturer of prefabricated homes coats surfaced strips of material on the edges first, while they are tied together with twine; then breaks the bundles apart for running the pieces flatwise.

I called the Wilmington plant and talked to their production manager. He told me they were doing it this way. When I asked whether the twine did not leave marks on the stock, he said it left faint marks across the edges, but not enought to be serious on the particular work they were doing.

Actually, there are other methods by means of which groups of parts of uniform size can be firmly held in a bundle without the awkward use of twine. One of these calls for the use of wood handscrews or C clamps, such as are often used in gluing and assembling operations in woodworking factories.

A number of uniform-length parts are arranged on edge on a flat top table at the infeed end of machine, and bunched closely together. Then, a wood handscrew or C clamp is

Strips are coming through flatwise, after having been edge coated while tied in bundles. Photograph supplied through courtesy of The Black Brothers Company, Incorporated.

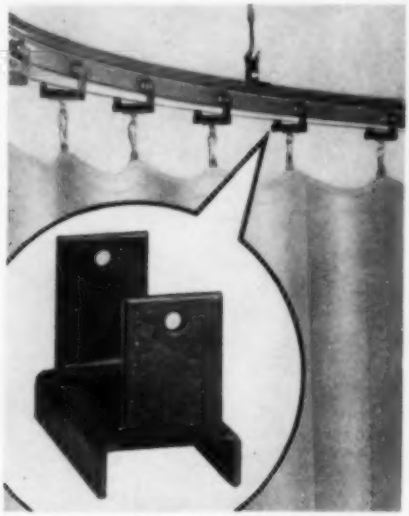
opened far enough to take the group of pieces at one or both ends, and the two jaws are tightened over the ends of the pieces. This is practical only when there is plenty of width to the roller coater, so the projecting screws of the clamps will clear everything safely.

Anyway, here is an idea; someone may be able to easily improve on it, with comparably better or faster results.—*John Hyler.*

Coating Steel With Nylon

NYLON is now being successfully applied to metals, adding its wear resistance, low surface friction, non-abrasive and sound deadening surface characteristics to the strength and dimensional stability of metals. A new coating process, utilizing dry powders, is reported to obtain engineering results previously unobtainable with nylon solutions.

Steel curtain carriers are now being nylon coated by Lehigh Research and Development Corp., Allentown, Penna., by the new "Whirlclad" process licensed from Polymer Processes, Inc., Reading, Penna. The curtain carriers which slide along an aluminum track, are coated with wear resistant nylon to prevent metal to metal galling and scraping, and to provide longer life of parts. The low friction nylon surface also reduces objectionable noise, an important property to the operation of stage curtains.



Shows nylon-coated steel carriers.

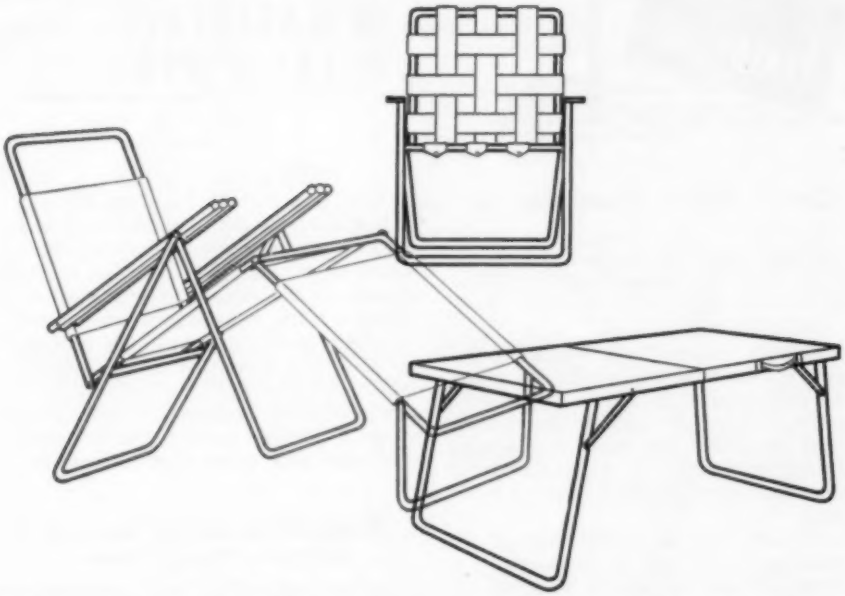
The Whirlclad process consists essentially of dipping a preheated object to be coated into a bed of finely divided dry coating powders, fluidized by ascending currents of gas or air in specialized equipment. The parts to be coated are preheated above the melting point of the coating powders, and the powders essentially fuse onto the surface of the part. The object to be coated must have a higher melting point than the coating powders.

The process was invented in Germany by Knapsack-Griesheim under the term "whirlsintering." Patents have been issued in Germany, France, Italy and Great Britain, and are pending in the United States. Polymer Processes, Inc. has obtained exclusive United States patent and licensing rights.

Using the coating material in dry powdered form results in a uniform coating unmarred by irregularity in material flow, or flow from sharp corners. A coating of 10 thousandths of an inch is obtained in a single dip.

The coating powders used are known as Whirlsint nylon powders. The powders are specially processed to provide satisfactory adherence and mechanical properties.

Observe a person who displays initiative and you will find that he has three essential characteristics: 1) A feeling of responsibility. 2) Sense of originality. 3) Capacity for action.



Here's a better lacquer for aluminum

Aluminum lawn furniture coated with lacquers made of Eastman Half-Second Butyrate assures lasting protection against weathering and unsightly rub-off on hands and clothing. These films are stable to ultraviolet light and do not whiten, yellow or peel.

Clear, tough, strong and durable, Half-Second Butyrate lacquers resist attack from water, detergents, cleansers, and salt spray.

Application of these lacquers is easy, quick and inexpensive. They may be applied to carefully cleaned aluminum surfaces without priming, by dipping or spraying. Properly formulated, Half-Second Butyrate lacquers deposit a film of adequate thickness with just one coat. Air-drying occurs in a matter of minutes, eliminating the need for ovens.

Highly soluble, Half-Second Butyrate lacquers can be formulated in such economical solvent systems as ethyl alcohol and toluene. The low density of Half-Second Butyrate assures good coverage per pound of film former.

If you want lasting outdoor protection for your aluminum products ask your lacquer supplier about Half-Second Butyrate lacquers ...or write us for more information.

HALF SECOND **BUTYRATE**
an Eastman film former

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City; Framingham, Mass.; Cincinnati; Cleveland; Chicago; St. Louis; Houston. **West Coast: Wilson Meyer Co.,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

● SUPPLIES
● MATERIALS
● EQUIPMENT

Circo's Vapor Steam Cleaner

A new, heavy duty type steam cleaning machine for general industrial uses is announced by Circo Equipment Co., 124 Central Ave., Clark (Rahway), N. J.

A fully automatic, safety protected system enables one-man operation. At the snap of a switch a spark is generated which ignites the burner and puts the machine into action. From this point on, fully automatic controls maintain the operation at its peak.

No troublesome pre-mixing of the cleaning compound is necessary, nor is time wasted in adding or adjusting the water or agitating the unmixed compound. From the point at which the dry compound is placed in its tank until it emerges as a super saturated jet of steam from the gun, the whole mixing operation is fully automatic. Exactly the required amount of hot water is fed into the compound tank to insure proper dissolving. This solution is then fed into the steam stream in the desired strength as selected by the metering valve located on the instrument panel—but not until after the steam leaves the heating coils. In this way the heating coils are protected against partial clogging or possible complete obstruction. **For more data, circle 1 on colored card.**

Full operating pressure is generated in 90 seconds. The system is automatic.

Keeps Paint Being Used at Uniform Temperature

In several industries, component parts are painted by dipping or flow coating. The former employs tank immersion; the latter involves passing the parts between rows of spray nozzles; both systems may give some trouble because of a change in temperature of the coating being applied.

A simplified flow diagram of a dip unit which provides close control over the temperature of the paint is shown in the accompanying illustration. This happens to represent an automotive plant installation but is generally typical of systems in widespread use.

Problems arise when metal parts to be coated receive surface-preparation treatment, usually terminating in a trip through a drying oven which elevates their temperature. As more parts pass through the tank the paint collects more heat until a point is reached when the desired performance characteristics of the paint are seriously affected. "Sag" and flow characteristics deteriorate as viscosity is changed.

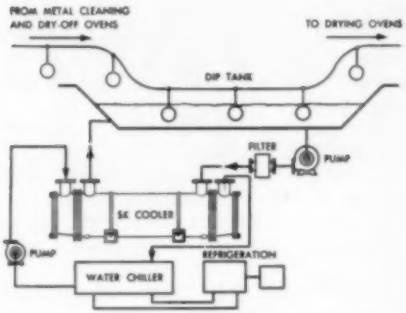


Diagram of setup for cooling paint in dip tank—where the temperature of the paint may rise as a result of dipping metal parts that come directly from a dry-off oven.

Bonding, filming or hiding power also can be affected. Controlling the condition is primarily a matter of cooling the paint (or, in the case of start-up operations, the opposite may be desirable; a heat exchanger may be needed to heat the paint).

In the illustration shown here, cooling is carried out by a Schutte & Koerting Type "BD" Cooler. Overheated paint is pumped from the bottom of the tank, it is filtered, brought down to desired temperature in the cooler and returned to the tank. Plant service water is sometimes used as cooling medium, but a closed system employing a conventional electrical refrigeration unit, chiller, centrifugal pump and simple instrumentation provides much better efficiency and control.

According to Schutte & Koerting Co. engineers, cooler design depends on job requirements. . . .

Cooler units of the type used in paint-application systems are described, and selection data presented, in a bulletin available from Dept. HT-G, Schutte & Koerting Co., Cornwells Heights, Bucks County, Penna. **For more data, circle 2 on colored card.**

Sepanski Automatic Spray-Mask Painting Machine

Sepanski's new Automatic Spray-Mask Painting Machine (Model BS-6M) is quickly adaptable to a variety of spray-mask painting jobs involving work pieces of various sizes, shapes and surface conditions.

Model BS-6M spray-mask painting unit.

It has quick adjustment for any size area within the machine's dimensions (8½ x 34½-in.). A single adjustment at each end of the desired stroke automatically controls both the length of the stroke, and the spray gun "on" and "off". This eliminates "over run" on small parts, and conserves production time and paint.

Freedom for gun positioning at any angle and distance from the work is provided and spray gun tilt angle is quickly adjustable from 0° to 15° in each direction (30° total) to assure uniform coverage in recesses, angles and around bridges and obstructions.

The gun carriage mechanism is ball bearing mounted traveling on a ball screw drive for smooth and uniform control. Lubrication is by air pressure and is automatic while machine is operating.

Pneumatic operation (Rotary Air Motor) provides flexible and accurate control of speed of travel, amount of finishing material, spray gun pat-

tern and cycling, and makes it possible to finish simple or involved designs with equal ease.

The general construction of the BS-6M Automatic Spray-Mask Painting Machine permits complete concealment of the spray within the machine and, when connected to a suitable ventilating and ducting system, prevents the escape of vapors into the room.

For more complete information and for the many variations possible on this machine, write Sepanski, 900 Clancy Ave. N.E., Grand Rapids, Michigan, for Bulletin No. IF-6.

For more data, circle 3 on colored card.

Electric Light Tube Washer

Designed for the rapid production cleaning of fluorescent light tubes of various sizes, the conveyor washer illustrated here performs a 3-stage cleaning operation automatically. The tubes are placed vertically into racks and fed into the machine by conveyor. Upon entering the machine the work is received through two openings—53-in. and 102-in. high—to accommodate tubes measuring 18, 24, 36, 72 and 96-in. high. The glass tubes are washed with detergent solution, rinsed clean and dried. Processed parts are then conveyed to the next step of the operation.

The machine, designed and manufactured by Industrial Systems Co., Matawan, N. J., is gas heated and measures more than 12-ft. high, 10-ft. wide and 33½-ft. long. It has a production rate of 3000 pieces per hour.

The washer will clean other materials such as plastic, metals, etc., of similar size and shape with minimum or no conversion necessary.

For more data, circle 4 on colored card.

Detrex's Rotary Drum Degreaser

Greater efficiency and economy in metal cleaning by combining solvent degreasing with automated work handling is provided by Detrex's Model 1DD750. This rotary drum degreaser fills the needs of a wide range of degreasing operations.

Steam heated and measuring only 6½-ft. wide, 6-ft. high and 4-ft. in direction of work flow, the 1DD750 is compact enough to be readily usable

Here racks of fluorescent light tubes are going through, but other parts can be cleaned too.

Functional Finishes!

If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity . . .

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

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5206 Harvard Avenue, Cleveland 5, Ohio

where space is at a premium. It handles 5-cu.ft. per hour with a rated capacity of 2000-lbs. steel or brass per hour.

Parts to be cleaned enter via a conventional chute. They are carried through the degreaser by a screw-type drum which tumbles the parts, subjecting them to vapor and immersion cleaning and final vapor rinse and drying. Parts are then discharged through a chute on the opposite side.

This new Detrex rotary drum degreaser may be seen in operation at the National Metal Exposition, International Amphitheatre, Chicago, November 4th through 8th, at Booth No. 1316.—Detrex Corp., Box 501, Detroit 32, Michigan.

For more data, circle 5 on colored card.

Originality can be increased—but the boss should make it possible and make it easy.

New Fulljet Spray Nozzles

A new Spraying Systems Co. Fulljet Spray Nozzle provides an extremely wide full cone spray. These nozzles operate at a spray angle of 120°, offering a maximum coverage of pattern area.

Typical applications for this new type of nozzle include rinsing, cooling, foam breaking, dust control, air and gas washing, fire control drenching and chemical processing. Nozzles are offered in brass, steel, stainless steel and selected special materials.

These new Fulljet nozzles represent the newest addition to the Spraying Systems' full cone spray nozzle design group that together

YOUR PAINT SPRAY BOOTH CAN BE MORE EFFICIENT, MORE ECONOMICAL

Photo Courtesy Burnaby Venetian Blinds Ltd., Winnipeg, Canada

. . . With the many advantages of RP Paint Arrestors

Easily and economically installed, RP Paint Arrestors brought the advantages of minimum floor-space and down-time requirements, plus the most effective method of trapping paint overspray to this booth. Your plant, too, can benefit with RP Paint Arrestors. Write for complete information.

RP . . . PRODUCTS OF RESEARCH — AFI MEMBER

Research Products Corporation
Dept. 34, Madison 10, Wis.

provides a complete choice of types and capacities for every industrial need. For complete information write to Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois, and ask for Bulletin 91.

For more data, circle 6 on colored card.

Scale and Rust Remover

The properties and uses of Oakite Drycid, the recently introduced powdered acid scale and rust remover, are described in a service report published by Oakite Products, Inc., manufacturers of industrial cleaning and related materials.

The service report points out the convenience inherent in shipping, storing, and using a powdered rather than liquid acid; the lack of bothersome acid fumes; and the material's increased safety on various metals. One of the major advantages discussed is Drycid's greater safety when used to descale systems containing dissimilar metals.

Recommended solution concentrations and application methods are given in the service report, which is available from Oakite Products, Inc., 132F Rector St., New York 6, N. Y.

For more data, circle 7 on colored card.

Vinyl Texture Finishes By Metal & Thermit Corp.

The eye appeal of textured finishes is combined with the durability of vinyl plastisols in "M&T Armorhide," most recent addition to the line of Unichrome Organosols offered by Metal & Thermit Corp., Rahway, N.J.

Being textured, "M&T Armorhide" offers both production and sales appeal. The pattern of the finish hides

imperfections in metal surfaces to which it is applied; and the rich grained leather appearance of the finish has proven sales appeal.

Developed by John L. Armitage & Co., 245 Thomas St., Newark 5, N.J., and now manufactured and sold by Metal & Thermit under license, "Armorhide" provides a unique spray-applied finish . . . . available in a wide selection of colors.

"Armorhide" has the well known resistance to wear and chemical attack of the vinyl plastisols and organosols. "M&T Armorhide" textured finishes have been found to outwear baked enamel finishes by as much as 10 to 1 in laboratory tests with Taber Abrasers and in actual field use. In addition, the vinyl base organosol coatings offer superior resistance to moisture, perspiration, acids, alkalis and other corrosives.

For more data, circle 8 on colored card.

Earth Satellite Sprayed With "Coverlac" For Shipment

During this International Geophysical year, the United States is going to launch an earth satellite. This tiny moon is a hollow sphere made of

Spraying a strippable coating over surface of highly polished ball to protect it.

have your silk screens made by **NAZ-DAR!**

Silk, Nylon or Metal Cloth

- Prompt Delivery anywhere in U. S.
- Absolutely TAUT screens for perfect registry to last impression of run.
- Perfect reproduction of your black and white drawing.
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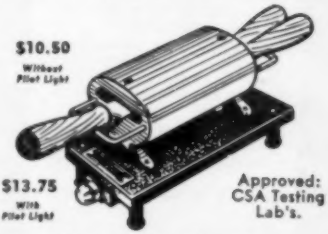

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PROVEN SUPERIOR performance in actual use under most extreme corrosion conditions — as container and pipe linings — as product and equipment finishes.

PROVEN SUPERIOR in resistance to practically all natural and chemical corroding elements including many acids.

PROVEN SUPERIOR in flexibility, color and gloss retention, long life and positive adhesion to most metals including iron and steel.

PROVEN SUPERIOR in reducing costly deterioration, replacement maintenance and customer complaints.

For a faster, low cost solution to YOUR corrosion problems write —

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BOX 89-F PARK RIDGE, ILLINOIS

• INTERIOR OR EXTERIOR •

magnesium alloy, made to house the instruments. The sphere was formed by Brooks & Perkins, Inc., and required many polishing and plating operations. These included copper, silver and finally gold plating. It was then shipped to the Naval Research Laboratory for final surface preparation.

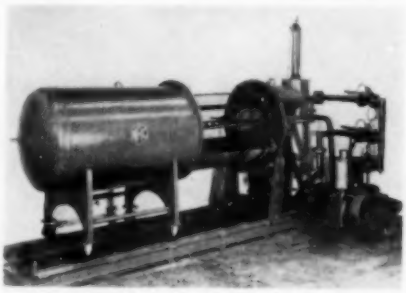
It was essential, in shipping this highly polished sphere, that it be kept scratch-free. Spraylat Corporation's strippable compound Coverlac S-9868-A was chosen for this purpose. The enclosed photograph shows the sprayer applying Coverlac S-9868A to this earth satellite. This coating air dried to form a tough plastic film, which was easily peeled from the sphere when it reached its destination at the Naval Research Laboratory, Washington, D. C.—*Spraylat Corp., One Park Ave., New York 16, N. Y.*

For more data, circle 9 on colored card.

Small Vacuum Metallizing Unit

A vacuum metallizing unit has been introduced by NRC Equipment Corp., 160 Charlemont St., Newton Highlands 61, Mass., to fulfill industry's need for a moderately priced, medium capacity vacuum coater which approaches the efficiency of NRC's large production units.

The new unit comprises a 5-ft. long, 42-in. diameter horizontal coat-



Complete unit for vacuum metallizing.

RONCI SPEEDIP WHIRL ENAMELER

Made in Three Sizes, R-100, R-200 and R-300. Capacities 312-cu.in. to 4400-cu.in.

IDEAL FOR LACQUERING AND ENAMELING PARTS UP TO 20 INCHES IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to hundreds of lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess materials. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

Prompt Deliveries

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.

ing chamber which provides 12,000-sq.in. of coating capacity per load. Two filament rods and a planetary jig which accommodates four work holding rods are cantilevered from the one head of the chamber which remains stationary. This arrangement provides maximum accessibility for charging the evaporating filaments and loading and unloading the work. The inside of the chamber is readily cleaned by removal of "Narliner" strippable plastic film which takes with it deposits of coating metal which accumulate after several cycles.

A pumping system with necessary piping and valves is connected via a short, efficient manifold to the coating chamber.

This system will exhaust an empty chamber to coating vacuum in less than ten minutes.

For more data, circle 10 on colored card.

New Flock Coating Machine

A new compact flocking machine, designed to handle a wide variety of work in the commercial, display, and industrial fields, is announced by Progressive Equipment Co., 8625 Mackinaw at Grand River, Detroit 4, Michigan. The new flocking machine has its own air supply. Numerous improvements over the Peco first introduced in August, 1956, include a roller chain drive with ball bearing, totally enclosed, overload-protected motor, a long-wearing nylon spiral feed brush, a flexible steel baffle for positive volume control, a separate overload-protected fan motor assembly, and accessories for special requirements.

The Peco is a rugged, self-contained, production-type machine, yet its 18 gauge steel outer case measures only 15 x 16 x 39-in., and the complete unit weighs less than 100-

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MEAN
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COLOR formulas and Useful Color Cards. Description, Properties, Theory, Harmony and Management of Colors. Furniture and Polychrome Finishing. Color and Light; Description of Color Pigments; Properties of Color Pigments; How Colors Are Prepared for the Trade; Basic Paint Pigments; Painting Oils; Volatile Thinners and Dryers; General Paint Mixing Methods; Color Theory, Principles and Use; Colored Paint Mixing, Methods; Mixing Special Purpose Materials; Color Harmony and Management; Selecting Color Schemes.

296 Pages, Fully Illustrated with Color Chart and Drawings, Cloth. Price..... **$3.00**

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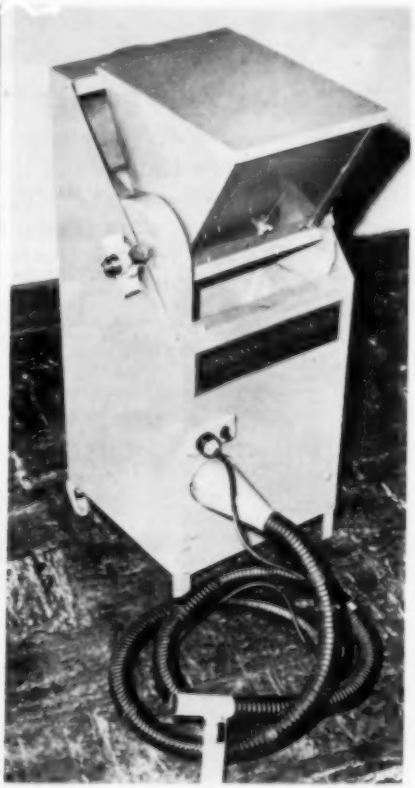


New features; outer case, 15 x 16 x 39-in.

lbs. The machine is mounted on two casters for easy portability. Thumb control switch on nozzle at end of flexible discharge hose provides fingertip control of flocking.

An exclusive feature is the tilting design of the supply hopper which permits fast and easy removal of unused flock in a matter of seconds. This avoids the usual delay and frequent waste of flock material when changing to another color or type of flock. Flock is removed by lifting hopper cover and tilting the hinged supply hopper forward.

For more data, circle 11 on colored card.

Infra Red Ovens
ANY SIZE-ANY SHAPE
You Can Assemble Your Own
with driQuik

REDUCE DRYING TIME FROM HOURS TO MINUTES as many factories have done and also produce better products at less cost whether metal, wood or plastic. Write for engineering data today.

INTERLOCKING SECTIONS

Your own maintenance crew can build panels or ovens for any application easily: heating, baking, dehydrating, curing, degreasing, etc. Pre-engineered, completely wired sections of unique ceramic type lava coated infra-red generators whose temperature can be changed to any percentage of rated power without waste of current. No bulbs or sockets to burn out.

driQuik DIVISION
DRY CLIME LAMP CORP.
GREENSBURG, INDIANA

New Metal Nameplates Are Self-Bonding

Only ten seconds are required to apply the new type of deep-anodized, self-bonding metal nameplate manufactured by W. H. Brady Co., 727 W. Glendale Ave., Milwaukee 9, Wisc. New Quik-Plates have a permanent pressure sensitive adhesive that requires no activation by water, solvent or heat. You simply remove the Blue Streak release liner and apply. Made from .004-in. aluminum, the Quik-Plate is backed with Permabond pressure sensitive adhesive that adheres instantly to metal, glass, plastic, wood, painted, smooth, flat, wrinkled and curved surfaces.

Quik-Plates are time-savers on the production line. The self-bonding nameplates require no holes, no pins, screws or fasteners.

Brady Quik-Plates are available in a wide range of colors, both glossy and matte finish. The legend is imbedded in flint-hard, deep-anodized colors that become an inseparable, permanent part of the aluminum nameplate. Colors are vivid and eye-appealing; legend will not tarnish, peel, crack or crumble off.

For more data, circle 12 on colored card.

Vinyl Coatings, 5 to 8 Mils

Lankote 200-H Series Vinyl coatings are sprayable at 45% solids, hot or cold. They apply at 5-mils per spray pass cold, and 8-mils hot.

In addition to film thickness other features are: ease of application, excellent flow-out, flexibility, abrasion and corrosion resistance, adhesion to ferrous metals, high gloss and fast drying. They are available in eight colors.—J. Landau & Co., Inc., Washington Ave., Carlstadt, N. J.

For more data, circle 13 on colored card.

Flexible Abrasive Wheels

Disposable flanges and a design that permits flush sanding are two major improvements in its line of small coated abrasive "PG" (polishing and grinding) wheels for cleaning and finishing operations, according to Minnesota Mining & Mfg. Co., St. Paul, Minn.

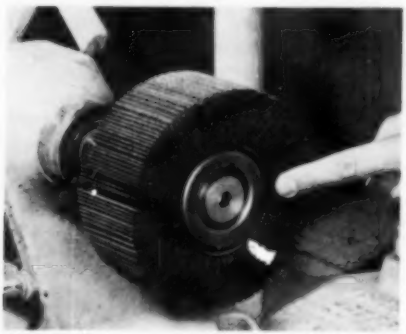
The new disposable flanges, which lock the wheel's coated abrasive leaves securely in place, are factory-installed and bonded to the core. This construction makes it unnecessary to remove the flanges when a wheel change is required; it's simply a matter of slipping the "PG" wheel on the spindle and tightening the cap nut. Performance characteristics of the wheel remain unchanged.

In addition to offering the user faster wheel changes, and eliminating the necessity for stocking extra flanges, the new disposable flanges provide hub strength not previously available on the small "PG" wheels.

Another feature of the newly-designed wheels is that the flanges are recessed into the side of the wheel. The end cap nut is also recessed, so that the wheel can be used flush against a surface, as in finishing a right angle or corner.

Further information about the small "PG" wheel line is available from the 3M company, Dept. F7-268, 900 Bush St., St. Paul 6, Minn.

For more data, circle 14 on colored card.



This is the new small "PG" (polishing and grinding) wheel with the recessed flange and end cap nut for use against flush surfaces. The working surface of the wheel is on the perimeter; recessed side allows butting against flush surfaces. Steel flange is bonded into position, cannot come loose from wheel, and is thrown away with the core when the wheel is used up.

Machine Applies Tape

Tapemaster, the machine that applies protective tapes to metal, plastics, and wood veneers, is now solving production problems for several widely diversified firms. Tapemaster is designed so that one man can apply tape to metal sheets as large as 5-ft. wide and 20-ft. long. The metal sheet lies in the bed while the applicating rollers travel across the sheet, applying the tape evenly and at the correct pressure. Tape may be applied in several ways, all in one operation. . . . It can be applied to cover the entire sheet or in strips or intermittently. Several different types of tape may be applied at the same time. Tapemaster is manufactured by Federal Hardware Products, Inc., 1023 N. E. Marshall St., Minneapolis, Minn.

For more data, circle 15 on colored card.

Rubber Wheel For Cleaning And Buffing

An unusually efficient buffing wheel, consisting of 17 rubber pads of special design, has been perfected by James Back & Associates, P. O. Box 532, Riverdale Station, Dayton 5, Ohio. This Kwik Kleen Buffer is completely safe and can be used without a shield on rubber, plastics and other

Bond. TACK CLOTH

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JUST THE WAY YOU WANT IT!

A SPECK-FREE FINISH EVERY TIME—Stays Soft and Tacky—*Now available in white or gold—in Four Different Types of Cloth.*

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ALL BOND TACK CLOTH is Spontaneous Combustion Proof, Lint-Free and Wax-Free. Gives a sparkling speck-free finish every time. Clean and Sanitary. No waste. Choice of Standard, extra Tacky or less Tacky.

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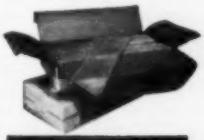
Cut off any size piece as needed.



IN BULK

Size is 18" x 56"—folded to 4-½ x 18" or 9" x 18" for ease of handling. Cut and folded—ready to use.

Also Individually Packed in Glassine Envelopes — 144 to the carton.

Bond® CHEMICAL PRODUCTS CO. *"The Tacky Wiper Specialist"*
2641 N. Clybourn Ave., Chicago 14, Ill.

soft materials. It is ideal for the removal of flash and trim from production molded rubber and plastics parts and for the cleaning of flash and smudge from recapped tires and white sidewalls. Exceedingly long wheel life is experienced without surface burning, scorching or scratching.

In addition, it can be used for "roughing" operations before vulcanizing and for other production surface preparations as required.

For more data, circle 16 on colored card.

Tissue-Thin Industrial Glove

"Nimble Finger," a new industrial glove that is thinner than a surgeon's glove yet resistant to deterioration from corrosive substances and is comfortable to wear, has been introduced by the Pioneer Rubber Co., Willard, Ohio.

Made of vinyl Pylox (TM), "Nimble Fingers" are designed for jobs requiring extreme finger sensitivity. This new Pioneer model has unusually high non-allergenic properties making it ideal for most persons allergic to rubber gloves.

"Nimble Fingers" can be worn in comfort all day long, thanks to the special textured inside finish. The new gloves can be turned inside out and worn reversed for jobs requiring a non-slip grip. The textured surface is perfect for such tasks.

"Nimble Fingers" are resistant to normal acids, alkalis, oils, greases and some solvents. They are useful on jobs where the products being handled have to be protected from bacteria or perspiration. Available in small, medium and large sizes, the new gloves are 10½-in. long.

For more data circle 17 on colored card.

New Wet Ink Varnish for Metal Decorators

A new non-blocking wet ink varnish for can manufacturers and metal decorators has been developed by the Paint & Brush Division of Pittsburgh Plate Glass Co., One Gateway Center, Pittsburgh 22, Pa.

The new varnish has good color retention and excellent non-blocking properties at various baking schedules, making it particularly useful where plate is coated and stored at high temperature and humidity. It is especially useful on beer and beverage cans, frozen fruit cans, and for general metal decorating work.

For more data, circle 18 on colored card.

New Multi-Color Spray Gun

A new multi-color spray gun which permits applying all patterns and types of flock materials without adding extra parts to the gun, and which, the manufacturer says, gives at least 25% more surface coverage per gallon than anything previously available, is now in production at Sharpe Mfg. Co., 1224 Wall St., Los Angeles 15, California.

The gun, designated Sharpe 35VZ "C"MC, embodies main line air adjustment in place of spray width control (allowing for any type flock pattern), a fluid nozzle which permits any desired material metering, and an internal air nozzle designed for multiple application. The Sharpe 35VZ"C"MC can be used with a 1-hp. or larger compressor and a pressure paint tank with regulating valve and gauge.

Designed for spraying multi-color paints.

For more data, circle 19 on colored card.

New Steam-Jet Cleaner

Important improvements have been made in the new Speedylectric Standard Steam-Jet Cleaner, according to an announcement by the manufacturer, Pantex Mfg. Corp., P. O. Box 660, Pawtucket, Rhode Island. Previously rated at 30-kw., the Pantex Speedylectric Steam-Jet Cleaner now carries a maximum rating of 20-kw. and, under ordinary operating conditions, usually consumes only 15 to 18-kw. per hour. Units are available for 220-v., 440-v., or dual voltage 220/440-v., 3-phase, 60-cycle.

The Speedylectric Standard operates on the electrode principle and has no tubes to scale or burn out. According to the manufacturer, it is entirely free from fire and explosion hazards.

Utilizing the blast of hot dry steam, alone, or mixed with concentrated detergents or solvents, the operator has fingertip control of the amount of liquid used in the cleaning operation.

For more data, circle 20 on colored card.

Daily Control Booklet Free

A new daily control booklet for three and 5-stage phosphatizing operations is being offered free by the DuBois Co., Inc., 1120 W. Front St., Cincinnati 3, Ohio. The booklet contains forms for record keeping for a complete month of phosphatizing operational checks; makes it easy for the user to keep a record of titration, compound added to tanks, temperatures, etc.

For more data, circle 21 on colored card.

For Your Convenience

Use INDUSTRIAL FINISHING magazine's "Reader Service" return cards to obtain further information on products described and illustrated in the "Materials; Supplies; Equipment" section which precedes this page; also to receive further information on what manufacturers have to offer—literature, products, supplies, services, etc., as mentioned on the following pages.

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Some of the returned cards we receive are not filled in correctly—and we cannot read a few of the hand written names and addresses. Before returning a card, please check to see if it is marked correctly—and legibly. Thank you.—Editor.

Ideal Tack Rags are used prior to painting, to wipe off and hold dust, dirt, sand particles and lint too small to see, but which might leave a blemish or defect on the final coat of paint or finish. Ideal Chemical Co., 1499 Dean Drive, South Euclid 21, Ohio.

For more data, circle 22 on colored card.

Ransburg No. 2 Process is excellent for getting an excellent uniform high quality wrinkle finish on business machines. Rejects by the former hand spray method are reduced, paint mileage is stepped up and more pieces per gallon of paint can be finished. Ransburg No. 2 Process reciprocating disk puts the paint where it's supposed to go, on the parts or product. Ransburg Electro-Coating Corp., Indianapolis 7, Indiana.

For more data, circle 23 on colored card.

"Cres-Lite" Bronze Powders for spraying, dipping or flow coating give a plated effect like a pure metallic bronze powder. A full range of 33 colors are in stock, or colors can be matched to suit your particular needs. New colors and shades of metallic finishes can be created in our Design Department. New color card showing our "in-stock" bronze powders is free upon request. Crescent Bronze Powder Co., 118 W. Illinois St., Chicago 10, Ill.

For more data, circle 24 on colored card.

Dupor No. 4 Respirator has double filters for easy breathing and greatest filtration of paint spray, dust and fumes. Soft rubber face mask gives an airtight fit. Patened Dupor valves bring in clean air and throw off breathed air. Weighs only 4-oz. H. S. Cover, P. O. Box 2508, South Bend 14, Ind.

For more data, circle 25 on colored card.

Spray Nozzles for all kinds of spraying operations, including all kinds of spray washing and cleaning setups. Catalog No. 24, an illustrated reference manual, shows the complete line offered by Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois.

For more data, circle 26 on colored card.

Industrial FINISHING

October, 1957, Issue

READER SERVICE DEPARTMENT

Without obligation, please see that we receive further information and manufacturer's literature identified by the numbers circled on this card:

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45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108		
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Name.....*Title*.....
(PLEASE PRINT)

My company's name.....

Street Address.....

City.....*Zone*.....*State*.....

Dolan's #3500 "Hyr-Solids" Lacquer (over 35% solids) is specially formulated in conjunction with companion sealer, to meet the demand for a full-bodied finish of the highest quality. May be sprayed hot, cold or airless, without reduction. Highly resistant to cold check, marring or scratching. Available in gloss, semi-gloss, satin or flat sheens. A product of V. J. Dolan & Co., Inc., Chicago 39, Ill.

For more data, circle 27 on colored card.

Electro Cold Stripper takes off Scotchlite reflective sheeting and background paint in seconds from traffic and road signs, whether aluminum or steel. Non-flammable; non-toxic; no heat; no current. Allied Finishing Specialties Co., 2641 W. Grand Ave., Chicago 12, Ill.

For more data, circle 28 on colored card.

Silk Screens in silk, nylon or metal cloth and silk screen weatherproof enamel are available from The Naz-Dar Co., 461 Milwaukee Ave., Chicago 10, Ill., for use on nameplates, toys, dials, ash trays, printed circuitry, etc. Screen and ink information available by writing Dept. P-6.

For more data, circle 29 on colored card.

Viscosity Control in flow coating, dipping and other finishing processes can be done automatically with the Norcross viscosity control. Improves uniformity of coating, reduces labor and material costs and eliminates waste. Write for illustrated bulletin. Norcross Corp., 247 Newtonville Ave., Newton 58, Mass.

For more data, circle 30 on colored card.

Perlite . . . . Air Dry Conversion Finish for furniture, especially blond or light colored woods—pink suites, tones, limes, grays, etc. Ideal for novelty furniture, utility tables, kitchen cabinets, bedroom furniture and other case goods. No force drying is necessary, but you get the advantages of a baked finish. A product of Perfection Paint & Color Co., Indianapolis 2, Indiana.

For more data, circle 31 on colored card.

Spruance Quality Maintenance paint products are available to condition your plant, warehouse and offices. There are Spruance quality maintenance primers and finishes for wood, metal, concrete, machinery, pipes, boilers and floor surfaces. Write The Gilbert Spruance Co., Philadelphia 34, Penna.

For more data, circle 32 on colored card.

Latex Paints for metal cut fire hazards. A lot of plant problems are solved with the use of metal finishes made with latex. Fire hazard is reduced, fire insurance rates may be lowered because, in latex paints, water replaces flammable thinners. Disagreeable paint odors eliminated. Check with your industrial finish supplier or Dow Chemical Co., Midland, Mich.

For more data, circle 33 on colored card.

Wood Grain Reproduction. New Sturdy high quality machines for exacting grain reproduction—some practically automatic in operation—are offered by Schmutz Mfg. Co., 1600 W. Main St., Louisville 3, Ky.

For more data, circle 34 on colored card.

Quartz Paint Ovens are based on the use of special Clepco quartz heaters which are designed to emit that part of the heat spectrum most readily absorbed by paints. Research facilities are available to determine the most efficient quartz oven for your requirements. The Cleveland Process Co., 1965 E. 57th St., Cleveland 3, Ohio.

For more data, circle 35 on colored card.

Acyrlic, Alkyd, Vinyloid coatings for a wide range of special jobs, are offered by The Varnish Products Co., 5206 Harvard Ave., Cleveland 5, Ohio.

For more data, circle 36 on colored card.

Excellent Sealing Characteristcs are provided by Balan Surfasand, a universal primer sanding surfacer made by A. C. Buschmann & Co., Inc., 410 Frelinghuysen Ave., Newark 5, N. J. It has excellent adhesion, hi-chemical and solvent resistance; is non-embrittling and chip resistant.

For more data, circle 37 on colored card.

Exposure Tests. Actual weathering, corrosion and sunlight tests, direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, 4201 N.W. 7th St., Miami 34, Florida.

For more data, circle 38 on colored card.

Airless Spray Painting saves as much as 50% in finishing materials, it is claimed by the manufacturer of this system of paint application, Bede Products Corp., Amherst, Ohio. If painting volume is big enough to sell any paint to reclaimers, the manufacturer urges immediate investigation of the Bede Airless Spray Coating Process.

For more data, circle 39 on colored card.

BOOKS
On Finishing Available

"ORGANIC PROTECTIVE COATINGS," (386 pages) $7.50
"PROTECTIVE COATINGS FOR METALS," (643 pages) 12.00
"ORGANIC COATING TECHNOLOGY," Vol. 1 ..... 12.00
"ALUMINUM PAINT & POWDER" (219 pages) 4.50
"FLOW COATING," (296 pages) new.. 8.00
"CHEMICAL FORMULARY" (Vol. X) 8.00
(Preceding Volumes also available, same price)
"FINISHING METAL PRODUCTS"—2nd edition (352 pages) 6.50
"PRACTICAL FURNITURE AND WOOD FINISHING" 2.00
"FURNITURE FINISHING" 543 pages) 5.00
"SPRAY PAINTING"—Industrial and Commercial (169 pages) 2.50
"COLOR DECORATION AND DESIGN (209 pages) 3.00
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1142 N. Meridian St. Indianapolis 4, Ind.

Small Vapor Spray Degreaser, includes work rest, spray pump, switches and lid. Works with any heat; different sizes. Baron Industries, 241 W. Ave. 26, Los Angeles 31, Calif.

For more data, circle 40 on colored card.

Irdite Chromate Coatings are corrosion resistant and they provide an excellent base on various metals to be given later decorative finishes. Applied by dip or spray. Allied Research Products, Inc., 4004 E. Monument St., Baltimore 5, Md.

For more data, circle 41 on colored card.

Solvents and Chemicals for thinning materials, for cleaning and other special requirements, are available in drums or tank cars from any one or more of the companies in the group, strategically located. The Solvents & Chemicals Group, 2540 W. Flournoy St., Chicago 12.

For more data, circle 42 on colored card.

"Magic" Tack Rags for wiping surfaces clean before finishing, before rubbing and before packing for shipment. Picks up the dust and lint instead of permitting it to fly elsewhere. Wm. A. Juergens Co., 4036 Lagrange St., Toledo, Ohio.

For more data, circle 43 on colored card.

Weather-proof Finish. The Kadmoid finish, for example, is used on tire rims which are often stored and always used outside, exposed to all kinds of weather. An Akron company proudly calls it their Bond-a-Coat finish. Universal Paint & Varnish, Inc., Bedford, Ohio.

For more data, circle 44 on colored card.

Paint Stripping. Modern epon and epon-based finishes need a tough stripping compound that works fast and gives long solution life. Send samples, specimens or test panels and get an early report on the fastest and most economical way to strip off coatings safely. The DuBois Co., Inc., 1120 W. Front St., Cincinnati 3, Ohio.

For more data, circle 45 on colored card.

Roller Coaters can boost your production, reduce down-time, cut coating costs. These heavy-duty machines are ruggedly and rigidly built to maintain high quality production. Apply paints, sealers, waxes, etc. to flat work such as wood, metal, plywood, plastic, etc. Literature available describing available equipment with optional features to meet your finishing needs. The Black Brothers Co., Inc., Mendota 1, Illinois.

For more data, circle 46 on colored card.

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Synthetic PEARL ESSENCE with the natural look!

PEARLESCENT FINISHES

BAKE OR AIR DRY FOR

Your Product Made of Metal, Plastic, Wood or Glass. Write for sample. Specify application and choice of vehicle.

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Plants: Maine • New Jersey • Canada

Kerpon Protective Coatings, formulated of Epoxy resins, afford better protection from corrosion caused by acids, caustics, moisture, alkalies, salt spray, water and weather elements. Kerr Chemicals, Inc., Box 89-F, Park Ridge, Illinois.

For more data, circle 47 on colored card.

Push-Button Touch-Up? With the Sprayon Self-Spraying Touch-Up Tool, any employee can quickly repair the paint damage where it happens—on the production line, inspection, shipping, warehouse, etc. Free touch-up folder available. Sprayon Products, Inc., 2071 East 65th Street, Cleveland 3, Ohio.

For more data, circle 48 on colored card.

"Pearlescent" Finishes. Synthetic, but with the natural-look, in air dry or bake. For use on metal, plastic, wood or glass. Rona Laboratories, Inc., East 21st & East 22nd St., Bayonne 2, N. J.

For more data, circle 49 on colored card.

R. P. Paint Arresters increase paint spray booth efficiency, save time, floor space and maintenance costs. Inexpensive replaceable pads arrest the paint overspray which can be removed and replaced with little disruption of regular production. Research Products Corp., Dept. 34, Madison 10, Wisc.

For more data, circle 50 on colored card.

Araldite Epoxy Resins for maintenance primers and enamels, wood finishes, concrete coatings, tank coatings and marine finishes, produce coatings with the toughness and resistance of baked films at ambient temperatures. Bulletin No. 18 on Surface Coating Resins is available from Ciba Company, Inc., Plastics Division, Kimberton, Penna.

For more data, circle 51 on colored card.

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Thermo-setting Acrylic Enamel. It's new Duracron enamel particularly well adapted to the finishing of refrigerators, home laundry equipment, ranges and air conditioning units. Is tough, mar-resistant and durable, making it also applicable to other products on which it is desirable to improve present baking enamels. Has superior adhesion either to bare metal or to primer. Many other characteristics. A product of Pittsburgh Plate Glass Co., Industrial Sales Division, Pittsburgh 22.

For more data, circle 52 on colored card.

"Phosteem", the new process for cleaning and phosphating metal surfaces for painting is introduced by Neilson Chemical Co., 6562 Benson St., Detroit 7, Mich. It is a low-cost production method for cleaning and phosphating cabinets, trucks, trailers, busses, air conditioners, farm implements, caskets and large bulky equipment. Phosteem provides top corrosion resistance and assures paint durability. Phosteem Bulletin 55-137 gives the facts.

For more data, circle 53 on colored card.

PROTECT LUNGS *against* PAINT SPRAY – DUST – FUMES

DUPOR No. 4 RESPIRATOR has big double filters for easy breathing and greatest filtration! Soft rubber face mask gives airtight fit. Patented DUPOR valves bring in clean air—throw off breathed air! Weight 4 oz. Economical! Costs only $2.00 postpaid. Order Now!

H. S. COVER, P. O. Box 2508, South Bend 14, Ind.

IDEAL TACK RAGS
FOR A PERFECT FINISH
Bulk or Bagged
IDEAL CHEMICAL COMPANY
1499 Dean Drive, South Euclid 21, Ohio

Cold Degreasing Solvent, Chlorothene, is efficient, fast working and safe (it has no flash or fire point). Cleans by spray, dip, wiping or bucket methods. The Dow Chemical Corp., Dept. S-947D, Midland, Michigan.

For more data, circle 54 on colored card.

New Color Styling reflects the quality of furniture. Lindeman Wood Finish has both. For new colors and finishes, inquire at Lindeman's studio and laboratory in Galax, Virginia, or write Lindeman Wood Finish Company, Inc., Indianapolis 2, Indiana and Galax, Va.

For more data, circle 55 on colored card.

Speedip Whirl Enameler is fast, clean and economical for coating a variety of small parts (up to 20-in. long) of wood, metal or plastic. It involves a power dip, lift and fast whirl, all inside a closed container. Ronci Machine Co., 2 Atlantic Blvd., Centerdale 11, R. I.

For more data, circle 56 on colored card.

"How to Strip Paint" is the title of a book issued free by Oakite Products, Inc., 20 Rector St., New York 6, N. Y. Outlines better ways to strip paint. Be sure to write for your copy. Oakite has more than a dozen fine stripping materials for every stripping job.

For more data, circle 57 on colored card.

Pearl Essence Finishes—what they are and how to use them is included in a free Technical Bulletin offered by the Argenta Products Co., Eastport, Maine.

For more data, circle 58 on colored card.

Formulations for Plastic Products have been created by Randolph Products Co., Carlstadt, N. J. Spray lacquer coatings equal to every plastic coating problem, particularly adhesion and the tendency to craze, have been formulated in decorative color contrasts, to give a new lift to your sales results.

For more data, circle 59 on colored card.

"Turcoat" Phosphating Booklet gives the solution to many paint adhesion problems. Lists complete line of Turcoat materials that assure permanent paint adhesion of organic finishes to metal parts and products. Turco representatives in all parts of the country can give immediate service and recommendations on any processing set-up prior to the use of organic finishes. Write Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif., for a copy of this free phosphating booket.

For more data, circle 60 on colored card.

Ovens to Bake all pastel colors perfectly. High volume; fine quality; excellent performance. Free catalog. The Lanly Co., 760 Prospect Ave., Cleveland 15, Ohio.

For more data, circle 61 on colored card.

Spray Nozzles for metal finishing applications. Special nozzles designed for applying phosphate coatings, hard-hitting fan spray for metal cleaning applications and finely atomized hollow or solid cone spray for metal wetting. Catalog IND gives complete details. DeLavan Mfg. Co., West Des Moines, Iowa.

For more data, circle 62 on colored card.

Tousey's New Hammercote, a new concept in hammer finishes. In final baked form, Hammercote gives an extreme hard, marproof film that frequently has the appearance of an extra coat of clear having been applied over the original finish. Hammercote applies smoothly with amazing uniformity in pattern. Tousey Varnish Co., 520 West 25th St., Chicago 16, Ill.

For more data, circle 63 on colored card.

Unichrome Plastisols are vinyl coatings that stand physical service without peeling. They have appealing gloss; come in a variety of colors. Applied by all usual production methods. Manufactured by Metal & Thermit Corporation, Rahway, New Jersey.

For more data, circle 64 on colored card.

Screen Process Catalog. Everything used in connection with screen process work—materials, supplies, tools, equipment—and more is listed, illustrated and described in a new 120-page book distributed by Advance Process Supply Co., Inc., 1442 W. Kinzie St., Chicago 22, Ill. An alphabetical index of contents appears on the last page.

For more data, circle 65 on colored card.

"Speck-Free" Finishes every time when you use Bond Tack Cloth. Save time and work with Bond Tack Cloths in handy rolls, bulk, white or gold, in three different kinds of cloth. Bond Chemical Products Co., 2641 N. Clybourn Ave., Chicago 14, Illinois.

For more data, circle 66 on colored card.

Graining Plates of any pattern, size or shape (wood grain, leather, marble, fabric, etc.) for hand or machine graining. American Richwood Products Co., 104 E. Mason St., Milwaukee 2, Wis.

For more data, circle 67 on colored card.

Industrial Ovens and Dryers. "Bulletin 157", a 16-page booklet (8½x11-in.) just issued by Young Brothers Co. illustrates and describes Young Brothers complete line of industrial ovens for baking, drying, curing, and heat treating. For easy reference, the bulletin contains sections describing batch type oven, conveyor type ovens, various air recirculating and heating systems available, and control and safety equipment. Copies of Bulletin 157 may be obtained by writing Young Brothers Co., Department B-48, 1831 Columbus Road, Cleveland 13.

For more data, circle 68 on colored card.

"driQuick" Interlocking Sections for building your own controlled-temperature infrared ovens. Have no sockets to burn out, has more intense far infrared energy with less power consumption. Impervious to vibration, shock, vapor and moisture. Dry Clime Lamp Corp., driQuik Division, Greensburg, Indiana.

For more data, circle 69 on colored card.

Fill Drums Safely (explosion proof) with automatic solenoid controlled drum filling valve with control switch. Fills containers on scales to any predetermined weight. The Vol-U-Meter Co., P. O. Box 54, Buffalo 16, New York.

For more data, circle 70 on colored card.

Wood Graining Machines. Vertical or horizontal roller models to make faithful grain reproductions on flat work or assembled cabinets. Easy, safe and fast in operation. Hamant Tool Co., Inc., 2916 E. Second St., Dayton 3, Ohio.

For more data, circle 71 on colored card.

Paint Spray Book. A 32-page informative book that reveals the latest in installation data, suggested systems and basic "packages of equipment" for any size spray painting operation, is offered by Stewart-Warner Corp., Alemite Dept. AE-47, 1850 Diversey Pkwy. Chicago 14, Ill.

For more data, circle 72 on colored card.

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"Filler, The Theory and Technique of Application," price 10 cents per copy.

"Finishing System for Magnesium," price 10 cents per copy.

"Automatic Viscosity Control for Mass Production Finishing," price 10 cents per copy.

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"What's the Big Plus Value in Selling Finishes?", price 10 cents per copy.

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"Lithographing Metal Sheets for Cans," price 10 cents per copy.

"Idolizing Low Gallon Cost Can Ruin a Good Industry," price 10 cents per copy.

"Viscosity Measurements," price 10 cents per copy.

"Finishing Wood Turnings in A Tumbling Barrel," price 10 cents per copy.

"Gold Lacquer on Outdoor Products," price 10 cents per copy.

Industrial Finishing Magazine

1142 N. Meridian, Indianapolis 4, Ind.

Instant Stripper—For metal or wood finishes. A non-flammable, non-toxic stripper which removes almost instantly, most finishes—enamels, either lacquer or synthetic (baked or air-dried), paints, varnishes, etc. V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39.

For more data, circle 73 on colored card.

Isophthalic-based Coatings provide harder films, greater durability, better gloss at a lower cost. Samples for all alkyd applications, and a demonstration of the superior properties of Isophthalic-based coatings are available, as well as instructions for their preparation. Oronite Chemical Co., 200 Bush St., San Francisco 20, Calif.

For more data, circle 74 on colored card.

Satin Finish Wooling Lacquers are ideal for use where a satin sheen finish with a smooth, silky feel is desired, without requiring a costly rubbing operation. Available in water white light resistant, for use on white or pastel finishes, or in regular lacquers for darker shades such as mahogany, walnut, etc. Made by The Lawrence-McFadden Co., 7430 State Rd., Philadelphia 36, Penna.

For more data, circle 75 on colored card.

Burn-in Tools for making quick and skillful repairs to nicked, dented or scratched finishes. The Op-Al Electric & Mfg. Co., 3135 Martindale Ave., Indianapolis 5, Ind.

For more data, circle 76 on colored card.

Dry and W-W Exhaust Booths: A 4-page folder covering dry and water-wash exhaust booths issued by Eclipse Air Brush Co., 390 Park Ave., Newark 7, N. J., includes fan data, diagrams, and other information.

For more data, circle 77 on colored card.

Binks New Spray Gun for circulating systems, cuts clean-out costs 65% when changing colors. Plants using multi-color circulating systems frequently shift spray guns from one color line to another. With the new Binks Model 19J spray gun, when used with the quick detachable hose connection, slashes "bleed-off" losses. Only 2 to 4 fluid ounces must be passed through the passages to make certain there is no inter-mix to cause a finish reject, compared with the customary "bleeding" operation which runs between 7 and 10 fluid ounces. The story of Binks new spray guns is contained in Bulletin RFG, sent free upon request.

For more data, circle 78 on colored card.

Restore Paint to its original consistency without opening the container, whether in ¼-pint cans or in 55-gallon drums. Time required is only 2-minutes per gallon. Full information from Miracle Paint Rejuvenator Co., 128 E. 10th St., St. Paul 1, Minn.

For more data, circle 79 on colored card.

Custom Finishes—stains, fillers, glazes, lacquers, enamels, synthetics—are specialties of the Wolverine Finishes Corp., 836-50 Chicago Drive, S. W., Grand Rapids 9, Mich. Wolverine's creative laboratories are ever ready to develop new eye appeal for customers' products. Consultation with one of its engineers involves no obligation.

For more data, circle 80 on colored card.

"Nacromer YNC" is the new pearl essence finish by The Mearl Corp., 124 E. 40th St., New York 16, N. Y. Is more lustrous than the finest grades of natural pearl essence. Can be applied by brush, spray or dip. Is easy to use, simply add a small amount to your regular coating material. Can be used on any sealed surface, wood, metal, plastic, leather, paper, etc.

For more data, circle 81 on colored card.

Complete Finishing Syestems, including parts washers, phosphatizing units, spray pickling, industrial ovens and flow coating, are featured by Circo Equipment Co., Clark (Rahway), New Jersey. Complete information on request.

For more data, circle 82 on colored card.

Lacquers, NGR Stains, and everything used for finishing fine furniture, cabinets, pianos, etc., plus styling and technical service—in Southeast U. S. A. Snyder Brothers Co., P. O. Box 631, Toccoa, Ga.

For more data, circle 83 on colored card.

Drum Upender No. 32. A simple tool that enables a workman to upend a heavy steel drum of material quickly, easily and safely. Morse Mfg. Co., Inc., 763 W. Manlius St., E. Syracuse, N. Y.

For more data, circle 84 on colored card.

Mask Washing Machines are offered by the Conforming Matrix Corp., Toledo 2, Ohio. These are fast, efficient, explosion proof, automatic mask washers that increase production with fewer tools. They eliminate damage and costly repairs of masks. Lowest solvent consumption. High pressure, no-leak pump. Literature available upon request.

For more data, circle 85 on colored card.

Multakolor—One-Spray Coat. A product of United Lacquer Mfg. Corp., Linden, N. J. Multakolor is a one-spray coat material which gives a textured finish of two or more colors. Can be used on any surface.

For more data, circle 86 on colored card.

For Cold Sanding, investigate the Model DA Easy Air Sander. With dual action, it eliminates swirls and heat, is fast and cuts abrasive costs 75%. Tops for sealers, shellac, lacquer, also for padding filler. Details from Detroit Surfacing Machine Co., 1268 E. 8-Mile Road, Detroit 20, Mich.

For more data, circle 87 on colored card.

Cuts Metal Cleaning Costs 50%. The Alvey-Ferguson Co., 757 Disney St., Cincinnati 9, Ohio, features its new A-F "3-in-1" washing machine, said to save more than 50% not only in intial investment costs, but also in operating and maintenance costs—over separate machines. It is actually three machines in a single housing using common tanks, spray systems, headers and drains. Other features are worth investigating. Free 28-page illustrated brochure on request.

For more data, circle 88 on colored card.

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HERE ARE enumerated in this remarkably valuable book of 544 pages, all of the common nad a variety of unusual and seldom heard-of defects and objectionable features that occur in paint, varnish, lacquer and synthetic enamel finishes; their probable, possible or real causes given; the effects described, and means of preventing and remedying these troubles fully outlined.

Chapters deal with these defects and troubles as they occur, 1) during or as a result of storage and preparation of materials before finishing; 2) when the materials are applied by various production methods and equipment, 3) during handling, processing or drying after application; and finally, 4) when and after the finished goods are shipped, displayed, stored or placed in service.

Defects covered include many more than could be named here, but to mention just a few there are: runs, sags, tackiness, films, too thin or too thick, slow drying, orange peel, alligatoring, wrinkling, pimples in films, pinholing, cracking, blistering, lifting, bleeding, blushing, blooming, discoloration, rainbow effects, gloss and dull areas, grained appearance, and scores o. others.

Practical information is also revealed in reference to safety precautions to prevent fires or accidents in paint shops and finishing rooms, skin troubles of workmen, poison from paint materials and fumes.

By referring to the "Subject Index" of 84 pages in back of the book, it is possible to locate quickly, the answer to any particular failure, cause or remedy.

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INDUSTRIAL FINISHING

1142 N. Meridian St. Indianapolis 4, Ind.

Koropon Enamels for use on furniture, hardware, evaporative coolers, gasoline engines and interior surfaces of food containers, is offered by the five strategically located plants of United Wallpaper, Inc., 1350 S. Kostner Ave., Chicago 23, Ill. Koropon enamels can be applied in any manner; supplied in an unlimited range of colors, glosses and clears. Will withstand nearly any abuse. Details upon request.

For more data, circle 89 on colored card.

Solution Resins Engineered for successful coatings. The Chemical Sales Divn., Firestone Plastics Co., Pottstown, Penna., features six Exon solution resins, each pinpointed to specific solution problems. Each resin is engineered so that its solubility and adhesion factors fit particular types of applications. All give greater resistance to chemicals, abrasion, corrosion and weather. Detailed information supplied to paint manufacturers upon request.

For more data, circle 90 on colored card.

Abrasion-resistance of Epon Resin-based Coatings protects castings frequently machined after finish has been applied. Perspiration acid peeling the coatings is also eliminated. Epon resin-based paint is unsurpassed for abrasion and chemical-resistance, making it an ideal all-purpose industrial coating. Ask your paint supplier or get the Epon resin coating story from Shell Chemical Corp., Chemical Sales Division, New York 17, N. Y.

For more data, circle 91 on colored card.

Paint Color Uniformity can be assured on, and in, manufactured products, plants, industrial installations, tools and equipment, by using the Bowles Color Drift Control System. It is time-proved, easy to use, costs little, saves much. Details available from the Bowles Color Drift Control System, 75 Third St., San Francisco 3, Calif.

For more data, circle 92 on colored card.

Aluminum Tough to Finish? Not with Northwest special aluminum chemicals such as Alkalume Cleaners—a full line of cleaners and etching compounds especially formulated for use on aluminum alloys prior to plating, anodizing, painting or welding. Also, Alkalume Pre-Plate, Acid Solvent Emulsion Cleaner No. 1, and Drawing and Stamping Compounds for aluminum. Descriptive literature available from Northwest Chemical Co., 9310 Roselawn, Detroit 4, Mich.

For more data, circle 93 on colored card.

Industrial Ovens of all types are featured by the Kirk & Blum Mfg. Co., Cincinnati 9 . . . . . for conveyorized, for batch production, and for testing or labortary. They meet all needs for drying, baking, dehydrating or other more specialized requirements. A Kirk & Blum engineer is available for consultation. Literature sent upon request.

For more data, circle 94 on colored card.

Tops in Finishes, or "Head and Shoulders" above the rest is an expression used by Rockford Varnish Co., Rockford, Illinois, to direct attention to the quality of its protective and decorative finishes. Laboratory and manufacturing departments, working as a team, provide the long and specialized experience needed to develop and deliver the best of industrial finishes.

For more data, circle 95 on colored card.

Non-dripping Lubricants for conveyors and other moving parts, made by Dow Corning Corp., Midland, Michigan. These are silicone greases that won't melt or drip at 450°F. Silicone lubricants withstand continuous high temperatures and corrosive fumes without oxidizing, decomposing, gumming. There's no dripping on newly finished parts. Ideal lubricants for conveyor bearings, cams, gears, valves, other moving parts. Free booklet on request.

For more data, circle 96 on colored card.

Strippable Booth-Coating that sprays fast, ends cobwebbing, is Liquid Envelope #49-36 Lo-Vis, a product of Better Finishes & Coatings, Inc., Newark 5, N. J. It gives you all the low-cost cleaning benefits of strippable booth coatings but completely eliminates cobwebbing. It's a low-viscosity formulation, fast spraying, fast drying and recommended especially for low-pressure equipment. Further information on request.

For more data, circle 97 on colored card.

Overspray in Your Water Curtain is a cause of overhead cost. While the overspray cannot be eliminated, the cost of removing deactivated paint from the spray booth tank and the water circulating system can. Investigate the Delpark paint spray booth water filter system which prevents deactivated paint from settling to the bottom of the tank by removing the paint matte while it is floating. Recirculation of the paint in the system is prevented and water nozzles remain foul-free. Ask for details from Industrial Filtration Co., Lebanon, Ind.

For more data, circle 98 on colored card.

Metal Etching Primer that air dries in minutes is available in any color and is offered by Lenmar Lacquers, Inc., 150 S. Calverton Rd., Baltimore 23. "Polyprimer", as it is called, is the result of years of research. It not only adheres, but actually locks into the surface of ferrous metals, aluminum and magnesium alloys to form a hard, tough, corrosion-resistant base. Air dries for finishing in 5 to 10 minutes for most topcoats. Samples on request.

For more data, circle 99 on colored card.

Agateen Clears assure beauty, quality, good appearance and protection. Don't gamble with the sale of your products at the retail level. Investigate Agateen clear lacquers, air dry and semi-bake lacquer enamels and baking lacquers. Agate Lacquer Mfg. Co., Inc., Long Island City, N. Y.

For more data, circle 100 on colored card.

Electrostatic Spray—or Flow Coat. With industry-wide experience in these as well as other processes, Sherwin-Williams is equipped to supply the finishing materials and the technical service needed to adjust solvent balance, viscosity level and other factors to the needs of the installation. Get details from The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

For more data, circle 101 on colored card.

"MAGIC" TACK RAGS

are the original—the genuine since 1923. Combustion-proof. Long lasting. For a perfect finish use "Magic" Tack Rags.

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Write for Information & Literature.

Automated 3-Stage Washer designed, engineered, built and installed by Peters-Dalton, Inc., Detroit 12, is featured as affecting important savings of time and labor, along with efficient and economical operation. Its function is to spray-wash both the inside and outside of torque converter housings. Peters-Dalton provides finishing equipment to meet every need.

For more data, circle 102 on colored card.

Hot 550° F. Can't Faze The Finish when it's Sicon Silicone Heat Resistant Finish. Applied on the Preway heater the grilles of which often reach a surface temperature of 550° F. the Sicon Silicone Finish stands the test, fully protecting the surfaces. Get a copy of the Sicon Brochure. Midland Industrial Finishes Co., Waukegan, Illinois.

For more data, circle 103 on colored card.

Napry Red Primer, used on steel tanks, covered 296 extra square feet per gallon compared with primer formerly used. It's worth investigating to obtain the right primer that affords better coverage and lowers costs. Lowe Brothers Co., Dayton 2, Ohio, makes Napry Red Primer and a full line of industrial finishes.

For more data, circle 104 on colored card.

For Appliances or other fabricated metal products . . . . that finish is Nubelite, a product of The Glidden Co., Industrial Paint Division, Cleveland 14. Nubelite enamels combine the required film-building qualities necessary for maximum impact abrasion resistance, film toughness and flexibility. They also provide top corrosion resistance, excellent color and gloss retention. Whether you make appliances or garden tools, bicycles or office furniture, Glidden experience and technical know-how in the industrial coatings field can improve the quality of your product and, perhaps, return considerable savings.

For more data, circle 105 on colored card.

MORSE
VERTICAL DRUM TRUCK
ROCK-A-DRUM

Picks up 55-gal. drums, rolls them over for side draining. Becomes a rugged stand on 3-in. wheels.

Morse Mfg. Co., Inc. 763 W. Manlius Street E. Syracuse, New York

Hydraulic Controls by North American Mfg. Co., Cleveland 5, Ohio, for pressure, flow and ratio control . . . . edge-guide control . . . . and automation. For quick reliable response to any demand, use a North American high-gain hydraulic amplifying relay. Its simplicity of operation, as well as its rugged, compact construction provides a versatile component for the designer of control systems. Bulletin 1-001 sent on request.

For more data, circle 106 on colored card.

Quality Industrial Finishes since 1928 is the record of The Clinton Co., Chicago 22. A product coating to specifications. Competency in performance—capacity to produce desired results adds up to Clinton efficiency in serving its customers.

For more data, circle 107 on colored card.

Flow-Coating Black Enamel Parts is one example of the part Mahon's engineered finishing equipment plays in the application of organic finishes. A huge enamel baking oven built against the roof trusses to provide storage space below; paint mixing tanks, solvent tank, recirculating equipment and operating control panels . . . . you can trust R. C. Mahon Co., Detroit 34, to design, make and install a complete finishing system to give the utmost satisfaction.

For more data, circle 108 on colored card.

Portable Hot Spray Unit cuts time and cost of industrial painting. Provides for better finish and coverage, shorter drying time and greater material savings. Two new models are available for the fabrication and maintenance industries, for ready access to all large structures. They incorporate the divorced action reciprocating pump, with five or fiftyfive gallon paint drum. Complete information from Spee-Flo Mfg. Corp., 720 Polk Ave., Houston, Texas.

For more data, circle 109 on colored card.

High-gloss Enamel holds up "down on the farm". It's the DuPont "Dulux" enamel, providing a good tractor finish that has the resistance of a bridge paint, with the looks and gloss of an automobile topcoat. Regardless of use, "Dulux" enamel gives smooth paint coverage even on sharp corners and edges. It has the hardness to resist chipping. Covers more area with less paint. Many other points that make it outstanding. Full details from E. I. duPont deNemours & Co. (Inc.), Finishes Division, Wilmington 98, Dela.

For more data, circle 110 on colored card.

A New and Modern Coatings Plant to better serve its customers, is announced by the Lilly Varnish Co., Indianapolis. Located at Templeton, Mass., this new plant adds an annual capacity of about one-half million gallons. For industrial finishes to meet your requirements, let Lilly and its affiliated plants, strategically located, serve you.

For more data, circle 111 on colored card.

All Major Types of Finishing Equipment such as manual spray equipment, automatic spray machines, flo-coaters, metal-treating units, dip-coaters, parts washers, industrial ovens, dust collectors, are now available from the one-source supplier, The DeVilbiss Co., Toledo 1, Ohio. DeVilbiss engineers will help you build, plan, revamp or supplement your finishing department.

For more data, circle 112 on colored card.

Sun Ray Quality Steel Wool assures fine finishes, according to the manufacturer, The Williams Co., London, Ohio. Free steel wool sample sent upon request. Sun Ray steel wool may be had in a variety of grades for every job; layer built pads; rolls; reels; bulk pound tubes.

For more data, circle 113 on colored card.

Hot Spray Units called Therm-O-Spray, heat both the material and the air electrically. Safety and adjustable controlled heat (170° to 350° F.) are only two of several interesting and practical features. A colorful 6-page bulletin explains and illustrates everything. Thermospray Co., Inc., 60 East 42nd St., New York 17, N. Y.

For more data, circle 114 on colored card.

A Glossy, Tenacious Finish that is tough and durable is being offered by Tenax Finishing Products Co., Newark 5, N. J., under the trade name of "Alkenite". It is a fast air-dry synthetic for use on trucks, conveyors and large equipment where parts can't be baked.

For more data, circle 115 on colored card.

Ionic Electrostatic Centrifugal Atomizer breaks production bottlenecks. A low capital investment, it increases production, maintains quality, cuts paint consumption. Reciprocating and stationary models are available. Up to 20 color changes per hour can be made. Full details from Ionic Electrostatic Corporation, Garfield, New Jersey.

For more data, circle 116 on colored card.

New Sunshine Styling Colors for Steelcase custom office furniture in metal, are among the many fine finishes in the quality line developed by Grand Rapids Varnish Corp., Grand Rapids 2, Mich.

For more data, circle 117 on colored card.

Paint & Mastic Spray. A 32-page catalog featuring automatic and air-powered paint and mastic spray units and accessories is announced by Gray Co., Inc., 1039 Sibley St., N.E., Minneapolis 13.

For more data, circle 118 on colored card.

Pen and Pencil Clear Finishes. Durable, long-wearing, high-quality finishes of this make used on more than 50 million pens and pencils. Air dry or baked. G. J. Nikolas & Co., Inc., 2850 Washington Blvd., Bellwood, Illinois.

For more data, circle 119 on colored card.

Complete DeBurgh Finishing System used in finishing Lester pianos. Koch-engineered, Koch-built DeBurgh finishing systems cut labor costs 50% and more, save 35% floor space, increases production and improves quality of products. Full information from George Koch Sons, Inc., Evansville 4, Ind.

For more data, circle 120 on colored card.

One-Coat Flow Coating. You can now flowcoat in one coat without prior priming, by using Ultraflo One-Coat Enamels made by Interchemical Corp., Newark 5, N. J. Ultraflo One-Coat Enamels give phosphatized metal a blemish-free mirror-like finish requiring little or no supplemental spray in just one operation. The high gloss finish has all the corrosion-resistance and durability of a conventional two-step primer and topcoat. Send for Ultraflo bulletin No. 216.

For more data, circle 121 on colored card.

Union Roller Coaters are available in four models that meet the widest variety applications. Sheets can be processed from 12" to 108" within range of these models . . . . in thickness from 0" to 4" on the Model 5, and from 0" to 2" on all other models. Designed for applying accurately controlled coatings . . . paint, lacquer, compounds, wax, oil, glue, adhesives, latex, plastic and other fluid substances . . . . to metal, veneer, plywood, fabric, paper, rubber. Write for the Roller Coating Bulletin. Union Tool Corporation, Warsaw, Indiana.

For more data, circle 122 on colored card.

Lacquers for Aluminum, made of Eastman half-second Butyrate, assures lasting protection against weathering and unsightly rub-off on hands and clothing. Films are stable to ultraviolet light and do not whiten, yellow or peel. Get details from your lacquer supplier, or direct from Eastman Chemical Products, Inc., Kingsport, Tenn.

For more data, circle 123 on colored card.

Metal Cleaning, Phosphatizing And Processing Manual Free

A colorful, 16-page manual, describing in detail 57 chemical processes that take place daily in over 12,000 metal-working plants has been issued by Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, California, manufacturer of specialized industrial chemical processing compounds. Printed in three colors, the profusely illustrated manual also includes nine reference charts applicable to the industry.

Among the chemical processes discussed in the manual are: Cleaning, phosphating, conversion coating, protective coating, paint and carbon removing, rust removing and preventing, descaling, inspecting, processing aluminum and maintaining of paint departments and other plant facilities.

Reference charts included in the manual are: Conversion factors, decimal equivalents, measuring surface areas, tank capacities, Fahrenheit-Centigrade conversion chart, phosphating reference chart, table of drop in air pressure, energy required to heat water and properties of saturated steam.

For more data, circle 124 on colored card.

Refinishing Damaged Furniture; Free Instructions

Harry Griver of Pennsylvania Lacquer Center announces that, "You and any of your employees are invited to attend a free course of instruction in the art of patching and refinishing damaged furniture at the Broadwood Hotel at Broad and Wood Sts. in Philadelphia. Classes will be held on the fifth floor in the South Gold Room on Wednesday, October 23rd and Thursday, October 24th, starting at 8:30 a.m. and continuing to 6 p.m.

Pennsylvania Lacquer Center is cooperating with the Mohawk Furniture Products, and welcomes the opportunity to provide this service at no obligation.

This course is designed to enable experienced, as well as inexperienced men to repair damaged furniture finishes.

Special Cleaning Problems 34-Page Book Free

A new 34-page brochure, "Special Cleaning Problems Solved," shows by photographs and schematic drawings how airless blast cleaning, air blast cleaning and wet blast cleaning have been employed in specific applications. Short case histories relate the experiences of more than 50 companies in producing a better product, usually faster, more economically and more efficiently.

For a copy of this brochure, ask for Catalog No. 105-D. Wheelabrator Corporation, 1144 S. Byrkit, Mishawaka, Ind.

For more data, circle 125 on colored card.

"Spray Painting Without Air" Demonstration at Metal Show

Demonstration of the Bede Airless Spray Painting, will be presented each day during the forthcoming 1957 National Metals Exposition to be held in Chicago, November 4-8.

This unique spraying system, developed by the Bede Products Corp., Amherst, Ohio, uses no air to atomize paint . . . . By reducing the overspray to a minimum, considerable paint and labor savings are realized. Health and fire hazards are reduced; it is possible to spray all general finishing and coating material as well as some materials that cannot be applied by other spray methods.

The automotive industry is utilizing the airless spray painting system for both manual and automatic paint application operations. Railroads, aircraft companies, earth moving and machinery manufacturers as well as wood and wood product manufacturers, are using this modern method of paint application.

Pump Paint From Drum

REGARDLESS of the care used in pouring paint from a shipping drum into the mixing tanks of a paint circulating system or into pressure tanks, accidents will happen. The chain hoist may slip a link or the drum may be tilted a trifle too much, causing paint to be spilled on the floor. The same applies to solvent when it is added to the tanks to maintain the prescribed viscosity.

Random Comment on the Industrial Scene

(Continued from page 6)

service companies, researchers find that vending machine sales of food are highest in plants which have bright, gay colors in eating areas. Plants which have placed the food vending machines in corridors without changing the wall colors, have shown the least food sales.

One example: An eastern plant had a golden yellow color predominate in the cafeteria. Nobody complained about the food. When the walls were repainted one summer, a dull slate blue was used in place of the yellow. When winter rolled around, complaints began to come in that the food was being served "cold," although the same cooking equipment and steam tables were being used. Sales in the cafeteria went down almost 50% before the plant manager ordered the walls done over in a warm primrose yellow. The complaints stopped.

* * *

Aluminum Is Plentiful. There is more aluminum in the world—in the land, sea and atmosphere—than any other basic metal.

What scientists call "earth matter" contains more of the light metal than iron, magnesium and titanium combined. Compared with any one of the other metals, aluminum is thousands of times more plentiful in the earth than any one of them.

Aluminum makes up more than 7% of all earth matter, while such metals as copper, lead and zinc each represent less than .02 of 1% of the earth matter.

These findings are reported in the current issue of the Review, employee magazine published by Reynolds Metals Company.

Better Water Thinned Paint. A new paint vehicle which makes possible, for the first time, water-thinned gloss architectural finishes with properties approximating those of solvent-thinned gloss paints has been announced by Reichhold Chemicals, Inc.

The alkyd emulsion, designated "1505 Synthemul," is said to offer better adhesion, better water resistance, and much greater mar resistance than any vehicle for water-thinned gloss architectural finishes available heretofore.

Paints made with it will cost less because a lower percentage of vehicle can be used in the formula without loss of gloss, due to the new emulsion's greater pigment binding capacity. At the same time, the corresponding increase in the amount of pigment in the formula gives more hiding power.

CLASSIFIED ADVERTISING

SALESMAN WANTED.

We offer a modern plant and lab. excellent service to back up a complete line of industrial lacquers. If you have experience in lacquers we can make a team profitable for both of us. To talk it over costs nothing. Why not contact us. Address IF-517, care Industrial Finishing.

TOP NOTCH SALESMAN WANTED.

With executive ability to represent a leading manufacturer of furniture finishing materials. Must be capable of developing new business in the Carolina-Virginia area. Proven ability to sell this area and some knowledge of wood finishing materials preferred. Only men presently earning in excess of $15,000 considered.

Submit complete resume of your experience prior to interview. All applications will be treated in strict confidence. Address IF-532, care Industrial Finishing.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

There may be certain firms or individuals to whom you do not want your reply sent. Simply address your communication to the box number in the ad and attach a separate list of names. Place both in a separate envelope addressed to Industrial Finishing Magazine. 1142 N. Meridian St., Indianapolis 4, Ind. If the advertiser is on the list you submit we will then destroy your letter. Names of advertisers using box numbers not revealed.

SALES AND SERVICE REPRESENTATIVE WANTED

To assist our representative in states of Indiana, Ohio, Michigan and Kentucky. Excellent opportunity for one familiar with industrial coatings and their proper application. Write O'NEIL DURO CO., P. O. Box 1166, Milwaukee, Wisconsin.

WILL REPRESENT MANUFACTURER OF INDUSTRIAL FINISHES.

Manufacurer of Vinyl specialty coatings wishes to represent manufacturer of quality line of industrial finishes in New York Metropolitan area. Intensive sales coverage assured. Warehousing if needed. Will consider only firms with some existing business in area. Address IF-528, care Industrial Finishing.

SALESMEN—INDUSTRIAL FINISHES.

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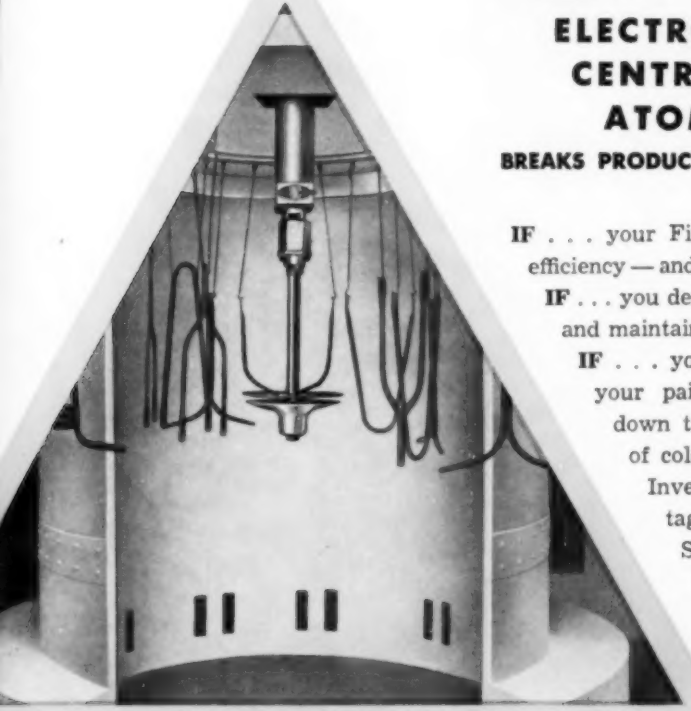

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